Courant Institute of Mathematical Sciences

New York University

DEPARTMENT OF COMPUTER SCIENCE MASTER'S STUDENT HANDBOOK

Courant Institute of Mathematical Sciences

Warren Weaver Hall

251 Mercer Street, New York NY 10012

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Department Contacts

The Courant Institute of Mathematical Sciences Warren Weaver Hall (WWH) is located at 251 Mercer Street, New York, NY 10012

Benjamin Goldberg, Director of Graduate Studies,
M.S. Programs in Computer Science
Email: dsg@cs.nyu.edu
Office: Room 401, Warren Weaver Hall
212-998-3495

Jean-Claude Franchitti, Associate Director of Graduate Studies
For the CS M.S. Program in Information Systems
Email: jcf@cs.nyu.edu,
Office: Room 309, Warren Weaver Hall
212-998-3014

Evan Korth, Director of Graduate Studies,
M.S. Program, Computing, Entrepreneurship and Innovation
Email: korth@cs.nyu.edu,
Office: Room 319, Warren Weaver Hall
212-998-3301

Rosemary Amico, Director, Administration, Computer Science
Email: amico@cs.nyu.edu,
Office: Room 307, Warren Weaver Hall
212-998-3068

Betty Tsang, Manager, Academic Affairs, Graduate Programs
Email: btsang@cs.nyu.edu
Office: Room 326, Warren Weaver Hall
212-998-3061

James Paguyo, Program Administrator, Graduate Programs
Email: paguyo@cs.nyu.edu
Office: Room 324, Warren Weaver Hall
212-998-3064

Academic Advising

All non-degree and Master's Computer Science and Information Systems students need advisor approval before they can register for courses. Students can get advisor approval by filling out an advisor approval form or scheduling an appointment with their advisor. Students will be notified that the advisor approval process is to begin about one month before registration opens for the following semester. At that time, the advisor approval form will be sent out. Students should be sure to review the course schedule for the upcoming semester so they have an idea of the courses they are interested in taking.

Students with a last name that begins with the letter A-M have Betty Tsang, btsang@cs.nyu.edu, as their advisor. Students with a last name that begins with N-Z have James Paguyo, paguyo@cs.nyu.edu, as their advisor. Students can make an appointment with their advisor using the calendar links below. Please be sure to consider the time zone your calendar is set to.

Make an appointment with Betty here.
Make an appointment with James here.

Please note that students are not required to meet for advisor approval for the summer semester. If you wish to register for a summer course, you can e-mail your advisor (please include your N number) and request that your advisor approval hold be removed. If you would like to meet with your advisor to discuss your progress and plans, you are welcome to do so.

Requirements for Masters in Computer Science

An MS student must complete 36 points of approved coursework satisfying requirements A, B, C, and D, below.

A. An MS student must complete 36 points of approved coursework with a cumulative grade point average (GPA) of 3.0.

- 21 credits must be taken as standard CS classroom-based courses.
- An additional 6 credits must be taken in standard graduate CS, Math and Data Science classroom-based courses; independent study; or MS thesis (no external internships). Independent study and master's thesis require DGS approval.
- The remaining 9 credits may be any of the above, or may be: credits transferred from previous graduate study in Computer Science at another university; external internship; or relevant graduate courses in other departments at NYU. At most 6 credits of external internship may be taken. Relevant graduate courses and external internship require DGS approval.

B. An MS student must complete the three foundational courses, listed below, and maintain a B- (2.667) or better GPA in the foundational courses attempted.

- CSCI-GA 1170 Fundamental Algorithms
- CSCI-GA 2110 Programming Languages
- CSCI-GA 2250 Operating Systems

An MS student will remain in good standing only if he or she maintains a B- (2.667) or better GPA in the foundational courses that have been attempted so far. If a student does not satisfy this requirement, the student will be placed on probation. The student will have until the end of the following semester to restore himself or herself to good standing or will be terminated from the program.

- A full-time MSCS student must successfully complete at least one of the three foundational courses within the first three courses taken and must successfully complete all three foundational courses in their first year of study.
- A part-time MSCS student must successfully complete a foundational course as the first course taken and must successfully complete all three foundational courses within the first six courses taken.

On rare occasions, an entering MSCS student may be granted an exemption from one or more foundational courses. To obtain such an exemption, a student must meet with the Director of Graduate Studies for the MS programs (DGS) right before the beginning of the student's first semester at NYU. The student requesting an exemption must provide clear documentation showing that his or her previous coursework is the equivalent of the corresponding foundational course and, upon approval of the DGS,

must pass a placement test right before the start of their first semester. The placement test will be as challenging as the final exam in the corresponding course.

C. An MS student must pass one course in two of the following four designated application areas: computation for science and society; graphics; intelligent systems; and databases.

- **Computation for science and society** includes courses on numerical methods and courses on applications of computation to the physical, biological, and social sciences.
- **Graphics** includes courses on computer graphics, visualization, solid modelling, vision, multimedia, and animation.
- **Intelligent systems** includes any course on artificial intelligence, machine learning, data mining, and natural language processing.
- **Database** courses include databases, distributed computing, and data mining.

Some courses can be counted in either of two areas. For example, a student taking Computer Vision can count it either as an AI course or as a Graphics course (but not both).

D. An MS student must complete a designated capstone course with a grade of B (3.0) or better.
Alternatively, subject to the requirements below and prior approval of the DGS, the student may complete a master's thesis or advanced lab.

Capstone courses will be identified each semester by the DGS. They require substantial programming effort and draw on key technical areas covered by the MS program. Examples of capstone courses include Advanced Computer Graphics, Advanced Database Systems, and Compiler Construction. A capstone course should be taken during the last year of studies.

Master's Thesis instead of Capstone Course
A student may instead choose to write a master's thesis if the following conditions are satisfied: the student has a cumulative GPA of 3.75 after six courses; the student has completed all three foundational courses with at least a B+ in each; the student has found a full-time faculty member to serve as a thesis advisor; and the student has received approval from the DGS.

MS thesis work can count for up to six credits of master's coursework. The thesis must satisfy the following criteria: it must be original research or design/implementation; the work required must be equivalent to that of two regular MS courses; the thesis must result in a high-quality document of 30-50 pages or more; and the thesis must be read and approved by two full-time faculty members, one of whom is the advisor. At the discretion of the advisor and the DGS, the thesis may be published on the department web page.

Requirements for Masters in Information Systems

The MSIS degree requires 13 courses (39 credits), 5 Stern courses, 5 Computer Science (CS) courses, an Information Technology Projects course and 2 free electives which may be taken as CS or Stern courses.

In addition, students must maintain good standing throughout their studies. This involves sustaining a grade-point average of at least 3.0 (B) each semester, successfully completing at least two thirds of all courses attempted, and completing the degree within five years. Students falling below the GPA and course completion requirements are placed on probation, and given until the following fall or spring semester to return to good standing, or faced with possible academic dismissal from the program.

The following course distribution is required (3 credits per course unless otherwise noted):

- Five Stern Courses. These include:
  - Two General Business Core Courses (6 credits). The following are recommended:
    - COR1-GB.1302 Leadership in Organizations
    - COR1-GB.1303 Firms and Markets
    - COR1-GB.1305 Statistics & Data Analysis
    - COR1-GB.1306 Financial Accounting & Reporting
    - COR1-GB.2103 Strategy I (1.5 credits) and COR1-GB.2104 Strategy II (1.5 credits)
    - COR1-GB.2303 The Global Economy
    - COR1-GB.2310 Marketing
    - COR1-GB.2311 Foundations of Finance
    - COR1-GB.2314 Operations Management
  - Three Technology Courses (9 credits). The following are recommended:
    - ITECH-GB.2318 Digital Strategy
    - TECH-GB.2346 Dealing with Data
    - TECH-GB.2350 Robo Advisors & Systematic Trading
    - TECH-GB.3322 Design and Development of Web and Mobile Applications
    - TECH-GB.3336 Data Mining for Business Analytics
    - TECH-GB.3350 Financial Information Systems
    - TECH-GB.3351 Risk Management Systems
    - TECH-GB.3355 Globalization, Open Innovation, and Crowdsourcing: New Ways of Organizing
    - TECH-GB.3356 Business Process Design and Implementation
    - TECH-GB.3362 Emerging Technology and Business Innovation

- Five Computer Science Courses. These include:
  - CSCI-GA.1170 Fundamental Algorithms is required
  - Two of the following 3 courses are required:
    - CSCI-GA.2262 Data Communications and Networks
    - CSCI-GA.2250 Operating Systems
    - CSCI-GA.2433 Database Systems
  - Two CS electives are required
    - **Note:** MATH-GA.2041 Computing in Finance can be taken as a CS elective.
- The Information Technology Projects (CSCI-GA.3812) course is required
- Two additional electives from either CS or Stern.
  - **Note:** students can take a **maximum** of 21 credits at Stern.

The Information Technology Projects (ITP) Course

One of the last courses an MSIS student takes is the capstone *Information Technology Projects (ITP)* course. This course is a unique software engineering and project management practicum. ITP offers students real world experience understanding and solving IT solutions to business problems via participation in a set of team projects at clients such as local corporations, non-profits and government agencies. Each team of about 3-4 students undertakes one IT project that lasts a semester. Students must complete CS Requirement A and CS Requirement B before enrolling in the Information Technology Projects course. The course offers an opportunity to experience (most of) the complete IT project life cycle. The following steps of an IT project are taught and practiced:

- Analyze business goals
- Gather requirements
- Develop project specification
- Estimate effort
- Allocate tasks to team members
- Develop schedule

- Obtain approval of specification and project plan
- Develop prototype
- Review code

The course encourages students to learn to balance 'analysis' and 'implementation' efforts to produce good software efficiently. It teaches students about the wide range of project management methodologies and approaches so they can think about how to choose the correct approach. In some cases, the Projects course has led to students obtaining employment with the clients served by the course.

Requirements for Masters of Science in Computing, Entrepreneurship and Innovation

The MS-CEI degree requires 13 courses (33 credits) including 4 courses taken at The Stern School of Business and 9 courses taken in Computer Science at the Courant Institute of Mathematical Sciences. The degree will be completed in one year and students must enroll full time.

In addition, students must maintain good standing throughout their studies. This involves sustaining a grade-point average of at least 3.0 (B) each semester, and successfully completing at least two thirds of all courses attempted. Students falling below the GPA and course completion requirements are placed on probation, and given until the following fall or spring semester to return to good standing, or faced with possible academic dismissal from the program.

The MS-CEI degree has a unique course structure that will require students to take courses in these areas:

- An introductory course on Design and Innovation
- 4 business classes on core aspects of entrepreneurship
- 2 courses on systems engineering
- 2 application electives in computer science
- 1 elective on mathematical techniques and statistics
- 2 core courses on Lean Launchpad and Entrepreneurship Capstone
- 1 course on Agile development and DevOps

Many of the design and entrepreneurship classes are core classes and the courses have a well-defined structure. Through the entrepreneurship courses, MS-CEI students will:

- Learn core design and innovation principles of highly successful startups
- Gain a comprehensive understanding of technology opportunity identification and implementation
- Learn the customer-focused approach to product development
- Provide students with entrepreneurial business skills for venture creation
- Learn Agile Development and Operations practices
- Integrate the key principles of entrepreneurship and technology development

Through the one-year program cycle, the design and entrepreneurship courses are structured so that students will have the experience of developing their own startup idea across the entire cycle including: idea incubation, Minimum Viable Product (MVP) design, customer discovery, MVP development, Lean Launchpad, MVP refinement, pitching the startup idea, venture financing and company formation.

The computer science courses are designed specifically to teach the essential CS fundamentals essential to make the students technically very strong in mathematical and statistical techniques and computer systems development. Students can choose two application electives among advanced CS classes that best suit their technology interests.

The course plan is structured in a defined order as follows:

Summer Session I (4.5 credits)

- CSCI-GA 2810 Design and Innovation (3 credits)
- COR1-GB 1102 Leadership in Organizations (1.5 credits)

Summer Session II (4.5 credits)

- MGMT-GB 3335 Introduction to Startups & Entrepreneurship (1.5 credits)
- COR1-GB 2103 Strategy (1.5 credits)
- Stern elective (1.5 credits)

Fall semester (12 credits)

- CSCI-GA 2630 Foundations of Networks and Mobile Systems (3 credits)
- CSCI-GA 2820 DevOps and Agile Methodologies (3 credits)
- CSCI-GA 2830 Lean LaunchPad (3 credits)
- Elective in Mathematical Techniques and Statistics (3 credits)

Spring semester (12 credits)

- Elective in Systems Engineering (3 credits)
- Two Electives in Applications (6 credits)
- CSCI-GA 2840 Entrepreneurship Capstone (3 credits)

The following Stern Business courses can be chosen as electives (1.5 points)

- COR1-GB 2105 Communication

The following courses can be chosen for the Mathematical Techniques and Statistics Elective (3 points)

- CSCI-GA 1180 Mathematical Techniques for Computer Science Applications
- CSCI-GA 2565 Machine Learning
- CSCI-GA 2566 Foundations of Machine Learning
- CSCI-GA 2945 Advanced Topics in Numerical Analysis (Convex and Non-smooth Optimization)
- CSCI-GA 2945 Advanced Topics in Numerical Analysis (Numerical Optimization)

The following courses can be chosen for the Systems Engineering Elective (3 points)

- CSCI-GA 3033 Special Topics (Distributed Systems)
- CSCI-GA 3033 Special Topics (Real Time and Big Data Analytics)
- CSCI-GA 2434 Advanced Database Systems

The following courses can be chosen for the Applications Electives (6 points)

- CSCI-GA 2270 Computer Graphics
- CSCI-GA 2271 Computer Vision
- CSCI-GA 2590 Natural Language Processing
- CSCI-GA 3033 Special Topics in Computer Science (sections of this course would be accepted if the content is appropriate)
- CSCI-GA 3110 Honors Programming Languages *
- CSCI-GA 3205 Applied Cryptography and Network Security
- CSCI-GA 3210 Introduction to Cryptography
- CSCI-GA 3220 Advanced Cryptography
- CSCI-GA 3250 Honors Operating Systems *

* Requires department permission

Registration

Once the advisor approval process has been announced, students should request advisor approval as soon as possible. Waiting to the last minute can delay the ability to register. Please be aware of the applicable registration dates and possible late fees. These are listed on the official NYU Academic Calendar.

Registration Appointments

Students are given appointment times for registration based on how many earned credits a student has. Based on the number of credits you have earned so far, you will be given a day and time on which to begin registering. You can register after that date and time, but you will not be able to register before that date and time. Again, you will be blocked from registering until you have been given advisor approval.

Current courses are not calculated into the earned credit amount. Only credits from successfully completed courses are counted. For example, if you are a full-time student in your second semester, you likely have completed 9 earned credits, assuming you took and successfully completed three courses in your first semester. If you are a full-time student in your first semester, you have not successfully completed any credits yet.

The registration appointments are broken down as follows:

Number of earned credits	Registration Day
27 earned credits or more	Initial Registration on 1st day
18-26 earned credits	Initial Registration on 2nd day
9-17 earned credits	Initial Registration on 3rd day
0-8 earned credits	Initial Registration on 4th day

Registration Holds
All master's and non-degree students will have an advisor approval hold on their account. A student cannot register until that hold is removed by the advisor. It is possible for a student to have additional holds that will block a student from registering. A Past Due Balance and Measles/Mumps/Rubella Vaccination are examples of holds that may block a student from registering. Click on "Details" in the "Holds" section on Albert to see the contact information for how to resolve the hold. Students are advised to check their holds and resolve any outstanding holds that would block them from registering before registration begins.

Enrollment Cap
All MSCS, MSIS and non-degree students have an enrollment cap of 9 credits. This means that a student can only enroll for 9 credits in a given semester. The system will not allow a student to enroll in an additional course, if the student is already enrolled for 9 credits or if the additional course would bring the total of enrolled credits over 9. If a student wants to request permission to take more than 9 credits in a given semester, the student needs to submit a Course Overload Request Form to his or her advisor. If

approved by the Director of Graduate Studies (DGS), the student will be allowed to enroll for more credits in the semester requested.

Swap Function

Please note that it is very important to use the swap function, especially if you have signed up for waitlists. In terms of using swap for a waitlisted course, you are basically telling the system I am enrolled in course A and wait-listing course B. If I can get into course B, then drop me from course A.

If you are enrolled for 9 credits and have also signed up for a waitlist, then you must use the swap function, or you will not be able to enroll in the waitlisted course. For example, if you are enrolled for 9 credits and are on a waitlist but did not use the swap function, when it is your turn on the waitlist, the system will see that you are already registered for the maximum number of credits allowed and will not enroll you. You will remain on the waitlist, but you will not be enrolled.

You must also use the swap function if you are on a waitlist for a course that meets at the same time as a course that you are enrolled in. For example, if you are registered for a course that meets on Mondays from 5:10pm-7:00pm and waitlist a course that meets on Mondays from 5:10pm-7:00pm, then you must set it up as a swap. If you do not and the system tries to enroll you off of the waitlist, it will see that you already are registered for a course that meets at that time and it will not enroll you into the waitlisted course.

Please refer to the links below for instructions on how to use the swap function on Albert.

- http://www.nyu.edu/registrar/sis/student-registration-swap-classes.html
- http://www.nyu.edu/registrar/sis/student-registration-edit-swap-classes.html

Maintaining Matriculation

If a student does not plan on registering for any credits in any particular semester, with the exception of the summer, the student must register for Maintenance of Matriculation (MAINT-GA 4747-001). Students will still need to set up an appointment and gain advisor approval to register for Maintenance of Matriculation. More information is available on the Maintenance of Matriculation page.

Stern Registration Procedures for MSIS Students

The Stern course schedule, course descriptions and course syllabi can be found here. Be sure to select "Non-Stern" from the student type dropdown menu.

When looking at courses, be sure to check the course prerequisites to ensure that you are qualified to take the course. Stern is very strict with prerequisite checking.

Stern students are given priority when registering for Stern courses. While Stern registration officially begins on a set date, that is only for Stern students. Non-Stern students are able to register for courses later in the registration process. MSIS students are given priority over other non-Stern students and are able to register earlier. For important Stern dates, see the Stern academic calendars.

The department will announce when registration for Stern courses will begin. Beginning on that date, you may register for Stern courses on Albert. Be sure to review the Stern course schedule before choosing courses, as not all Stern courses are open to non-Stern students.

- To review the MSIS requirements, visit the MSIS Program Overview.
- Stern Registration Procedures for MSIS Students
- Stern Registration Procedures for MSCS Students
- Procedure for Applying for Stern Prerequisite Equivalency

- [Prerequisite Equivalency Application Form for Stern Courses](#)

Tuition and Fees

Please note that the act of registering generates related tuition charges and fees, for which students are financially responsible. Check the NYU Bursar's page on [dropping classes](#) for exact dates when students can drop a course and still receive a refund.

To find out more information about tuition and fees, please refer to the NYU Bursar's page on [tuition and fee rates](#).

M.S. Internships

Under certain circumstances, it is possible to earn course credits for working on projects with educational value in an industrial setting. If eligible, Master's students can take up to two internship opportunities for three credits each.

Internship Qualifications

To qualify for an internship, a student must meet the following qualifications.

The student must be in good academic standing, a student:

- must not be on probation,
- must have a minimum cumulative grade point average of 3.0
- must have successfully completed at least 66% of courses attempted.

 Students who are not in good academic standing will not be approved for internship opportunities.

Full-time students must have successfully completed two semesters of full-time graduate course work before the internship is to begin. If you are a transfer student, we will consider your graduate course work at your previous institution towards this requirement, as long as it was in a related field. Please note that the two full-time semesters must be completed before you can begin your internship. However, you can apply while still completing your second semester. For example, if you begin your studies in the fall semester, you will have completed two semesters at the end of the spring semester. As such, you would potentially qualify for a summer internship. While you would not be able to work until the summer semester, you could and are encouraged to apply during the spring semester.

For part-time students, students must have successfully completed six graduate courses before the internship is to begin. If you are a transfer student, we will consider your graduate course work at your previous institution towards this requirement, as long as it was in a related field. Please note that the sixth graduate course must be completed before you can begin your internship. However, you can apply while still completing your sixth course. For example, if you are enrolled in your sixth course in the spring semester, you would potentially qualify for a summer internship. While you would not be able to work until the summer semester, you could and are encouraged to apply during the spring semester.

Students who are working in full-time positions are eligible to apply for internship credits for their current jobs, as long as they meet all of the qualifications and agree to the evaluation process.

The job responsibilities of the internship will be reviewed by the Director of Graduate Studies (DGS) or by the Associate Director of Graduate Studies for the CS Master's program in Information Systems. The internship should be educational in nature and should be consistent with the goals and educational

mission of the master's program. The description of the work will be evaluated to determine if it qualifies to be counted as graduate level course work.

Transfer Credits and Internship Eligibility

Master's students are able to transfer up to nine credits of graduate course work, as approved by the DGS and the Vice Dean of the Graduate School of Arts and Science. Students who transfer nine credits will not be eligible for any internship opportunities. Students who transfer six credits will be eligible for one internship opportunity. Students who transfer three credits will be eligible for two internship opportunities. This rule applies for both MSCS and MSIS students.

9 transfer credits = eligible for 0 internship opportunity
6 transfer credits = eligible for 1 internship opportunity
3 transfer credits = eligible for 2 internship opportunities

Relevant Graduate Courses and Internship Eligibility

MSCS students may count up to 9 credits of course work taken outside of Courant and the Center for Data Science toward their degree requirements. This limit of 9 credits includes courses outside of Computer Science, Math, and Data Science; transfer credits; and internships. Therefore, if you fill this option up with relevant graduate courses, you will not be eligible for an internship.

Applying for Internships

To apply for internship credit, please fill out this Internship approval form. Your request will be sent to and processed by your advisor.

For F1 International Students: When your request for internship credit is approved by the department, you will be notified by your advisor. At that time, you will be given instruction to submit your CPT request form via the OGS website. Please do not submit your CPT request before getting approval for your internship from the department.

The internship application process takes time. After an application is received, the student's academic record is reviewed to determine if the student qualifies for an internship. If the student does qualify, the potential supervisor is sent an e-mail to confirm the job description and to review the evaluation process. Once the supervisor responds, the application is sent to the DGS or the Associate Director of Graduate Studies for the CS Master's program in Information Systems for consideration. Once a decision is made, the student is e-mailed to let him or her know the status of the request.

Students who are approved for internship credit will register for CSCI-GA 3870-001 Internship in Computer Science:

CSCI-GA.3870 Internship in Computer Science, Graduate-level. Fall, Spring, Summer.
Prerequisites: Permission of Director of Graduate Studies.
Participation in a programming project or research project conducted outside the university in a governmental, commercial, or academic setting. Open only to graduate students with permission of the Director of Graduate Studies (DGS). Students must submit a brief written description of their work to the DGS before starting the internship and submit a written summary of their work when it is completed. MS students may repeat this course a maximum of two times.

The approval process is a lengthy one that requires many steps. Students should allow for at least two weeks before a decision is made. Be sure to plan accordingly and apply as soon as possible.

Evaluation and Internship Report Guidelines

All students are required to submit a report at the end of their internship. The report must be at least 6 pages in length (not including the cover page). The report should be written in your own words. One should treat the report as a professional, scholarly document. This means proper citations must be given if text is taken from a company website, trade brochures, or any other public sources. The report will count towards 20% of the internship grade. All reports must be approved by the student's supervisor. Students can either have the supervisor sign off on a hard copy version of the report or can forward an e-mail to their advisor from the supervisor stating that the report has been read and approved. The report must be submitted to the student's advisor within two weeks after finishing their internship. Failure to submit the report on time could affect the approval of a future internship.

The report should follow the following format:

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1. Cover Page

The following information must be provided on the first page. It should be centered in the middle of the page:

Name

Student ID Number

Degree Program (MSCS or MSIS)

Internship Semester and Year

Employer and Employer Location

Supervisor Name and E-mail

Disclaimer: This report is submitted to NYU's Computer Science Department for the sole purpose of assigning an internship grade. The information remains confidential and proprietary to the company.

2. Abstract

An abstract is not an introduction, it is a brief (50-70 words) summary of your report.

3. Introduction Explain which company you interned with, where the facility was located, what the business of the company is, the area you worked in and the main emphasis of your internship.

4. Discussion of Projects

Discuss in detail the areas of responsibility you had to deal with during your internship. Although this is an overview of your internship experience, include technical details about the projects you worked on. How many lines of code? What technologies, languages, tools, systems were used? Discuss the significance of your efforts relative to the company's operations.

5. Summary and Conclusions

Summarize your work and learning experience. Explain how the internship either reinforced or changed your career goals. Discuss any new perspectives you obtained because of this experience. Elaborate on

the benefits you realized from the internship. Did you face any challenges or difficulties in your assignments? How did you solve these issues? In what ways did you apply what you have learned in your graduate courses to the internship? What NYU courses have been helpful? What useful skills could NYU have provided for you? What curriculum additions or changes would you suggest as a result of your experiences?

Supervisor Evaluation

The supervisor must also complete a written evaluation of the student. Supervisors can either complete the departmental evaluation form they are given or they can submit their own written evaluation form. The department will contact the supervisor directly to provide the evaluation tool and further instructions.

Students who are requesting internship credit for their full-time jobs should note that they will still need to create a report that is approved by the supervisor and must have the supervisor submit an evaluation on their performance, even if they are already being evaluated as a full-time employee.

A student will not receive a grade in the course until all required internship materials are submitted.

Additional Guidelines for Students

Important Considerations Before Accepting a Job or Internship

GSAS Policy on Internships for Academic Credit

For Employers:

Please follow the terms and conditions when posting a job.

Additional Guidelines for International Students

International students interested in internships for course credit can utilize Curricular Practical Training (CPT), if eligible. Students should review the requirements and qualifications for CPT on the NYU Office of Global Services (OGS) website. Getting authorization through OGS takes additional time. Students should be sure to apply early for their internships. International students in our MS programs may only work 20 hours or less per week on CPT or pre-completion OPT during the fall or spring semesters.

Research Opportunities

Advanced master's students are encouraged to seek research opportunities with regular full-time faculty.

Why research?

Besides the intellectual challenge, there are many practical advantages in getting engaged in research.

- Doing research provides valuable training in creative thinking, independent problem solving, and/or large(r)-scale software development. These skills are extremely valuable whether you decide to work in the industry or academia. Thus, solid research experience strengthens your CV.
- You may discover research as a wonderful career option. By working on research projects, you may discover that you really like doing research and are really good at it. Quite a few of our M.S. students go on to apply for PhD programs at NYU or elsewhere because of their research experience.

- Research projects are usually collaborative. As a result of working closely with PhD students and your faculty advisor, you end up making strong connections with them. These connections may become very handy when it comes to being recommended to graduate schools or industry jobs.

All the above benefits do not come by easily, as research is a serious undertaking. Typically, the workload of research is equal to that of one or two regular classes. Therefore, make sure you can devote the required time and energy before searching for research opportunities.

Finding Research Opportunities

The easiest way is to take classes from a full-time faculty member who has active research projects. You should perform really, really well in his/her class. As faculty members usually teach classes in their area of research, taking their classes gives you some required background to do research in that area. Faculty members are also more open to providing research opportunities to top students in their class.

You can browse the homepages of individual faculty to find out his/her research interests and active projects. For the list of research areas and the corresponding faculty, see the research areas page

Some advanced students also directly email faculty members to ask for research opportunities without having taking their classes.

Please note that, in order to get credits for research, students should be under the direction of a full-time faculty member.

Getting credits for research

Master's students engaging in research projects can get credits for their research work in two ways.

- Independent Study
- MS Thesis

Independent study

Master's students register for the course CSCI-GA 3813-003 Advanced Lab, generally for three credits per project, replacing one standard course from the department's curriculum.

To register for CSCI-GA 3813-003, a student should propose a project with his/her faculty research adviser's approval. The student should then complete a Master's Independent Study Authorization Form and have the research advisor sign off on the form. The form should be submitted to either James Paguyo, located in CIWW 324, or Betty Tsang, located in CIWW 326. The request will then go to the Director of Graduate Studies (DGS). If approved, the student will receive an email providing a permission number to allow the student to register on Albert.

Please note that students are not able to do an independent study with an adjunct professor. The department will consider requests to do an independent study with a full-time faculty member from another NYU department.

To see how independent study fits into the MSCS degree requirements, please refer to the MSCS Degree Requirements Form.

MS in Information Systems students may take no more than a total of six credits of independent study and internship combined. Please refer to the MSIS requirements.

M.S. Thesis

With the approval of the DGS, a student may do an M.S. thesis, under the guidance of a full-time faculty member as the thesis advisor. The student must also find a second full-time faculty member to serve as the second reader. Typically, these full-time faculty members are members of the Department of Computer Science, but the DGS will consider requests that involve full-time faculty members from other departments.

To qualify for a thesis, students need: at least a 3.75 GPA after completing 6 courses and a B+ or better in each foundational course. If a student was exempted from a foundational course, the course does not need to be taken.

To apply, students should submit MS thesis authorization form to their advisor, James Paguyo (paguyo@cs.nyu.edu or CIWW 324) or Betty Tsang (btsang@cs.nyu.edu or CIWW 326). If the DGS approves the request, the student should register up to 6 credits of MS thesis work. The advisor will give the student a permission number to register.

The thesis must satisfy the following criteria: It must be original research or design/implementation. The work must be equivalent to that of two regular MS courses. The thesis must result in a high-quality document of 30-50 pages or more.

The thesis must be read and approved by two full-time Department of Computer Science faculty members, one of whom is the thesis advisor, by the last day of classes for the semester in which the student plans to graduate.

If satisfactorily completed, the thesis will count towards Requirement D for the MSCS Degree Requirements.

We encourage students to publish their thesis on our departmental website. Once completed, students should speak to their thesis advisers about having the thesis posted on the web. If the thesis advisor approves, he or she should contact the DGS to request that the thesis be added to the departmental webpage.

Academic Integrity Policy & Rules

The Department of Computer Science believes that academic integrity is a core principle of education. According to the Center for Academic Integrity (www.academicintegrity.org), academic integrity begins as a commitment to five fundamental values: honesty, trust, fairness, respect and responsibility. These values begin with the individual and extend to others in the community of learning. In the classroom, they give rise to the following concrete but non-exhaustive rules for student behavior:

- Students are to do all assignments individually, with no collaboration or sharing of work, unless the instructor explicitly permits collaboration. If the instructor does not explicitly permit collaboration and one student shows or gives his/her work to another, then both students are considered to be cheating. Students may not use work provided by any person outside the class or by any external source such as the Web. Furthermore, students may not solicit other people to do assignments (in whole or in part) for them.
- When an instructor permits collaboration on an assignment, then collaboration is permitted only to the degree and in the respects that he/she specifies. Each assignment that is done collaboratively must state that it was done collaboratively and must list the collaborators.
- External sources, including published materials or material on the Web, may be used in assignments only to the extent permitted by the instructor. If such a source is used, the assignment must include

an attribution to the source. Ideas, algorithms, text, code, and experimental results all require proper attribution.

- A student may not submit the same assignment to two different classes, whether in the same semester or in different semesters, without the explicit permission of both instructors.
- During an exam, students must not communicate in any way, nor use any materials or technology not explicitly permitted by the instructor. One student may not look at another student's test. If one student allows another student to look at his/her test, both students are considered to be cheating.
- A student may not attempt to gain possession of or look at an exam before the start of the exam.

Disciplinary actions can vary in severity and can result in probation or termination from the graduate program. See the GSAS Statement on Academic Integrity.

Forms

- MSCS Degree Requirements Form

- MSIS Degree Requirements Form

- MS-CEI Degree Requirements Form

- Course Overload Request Form

- MS Thesis Authorization Form

- Independent Study Authorization Form

- Procedure for Applying for Stern Prerequisite Equivalency

- Prerequisite Equivalency Application Form for Stern Courses

- GSAS Policies and Procedures Manual and Forms

- Maintaining Full Time Equivalency Request Form

Checklist for Incoming Students

New York University (NYUHome) Accounts

Upon admission, all NYU students are assigned an NYUHome account based on their NetID. You can activate your account by visiting the NYUHome Start Page. You will be prompted with instructions from there. Your user ID for this account is your NYU NetID, which is printed on the back of your NYU photo ID card.

Courant Institute of Mathematical Sciences (CIMS) Accounts

All CS and Math graduate students are eligible for Courant computer accounts. To obtain a CIMS account, go to the Courant Computer Accounts page.

Visiting students from other departments, undergraduates taking graduate classes and students who have not otherwise been issued a password must specifically request an account by sending an email to James Paguyo at paguyo@cs.nyu.edu.

The body of your message should contain the following information:

- Lastname, Firstname
- NetID
- University ID number (such as N12345678)
- The program or class you are currently enrolled in

For more information regarding general computing resources at Courant, visit the Courant Computing Resources page.

Department Mailing Lists

Please click on the links below to subscribe to the various departmental mailing lists. **Note that you must subscribe using either your Courant or your NYU e-mail address.**

opportunities@cs.nyu.edu is a list that the department uses to post educational, research, and job opportunities. Employers wishing to post jobs or internships to the opportunities@cs.nyu.edu list should follow the instructions on the prospective employers page.

cschat@cs.nyu.edu is open to all department members and is used to post announcements and queries of potential interest to the Computer Science Department community.

colloq@cs.nyu.edu is used to announce talks and seminars in our department and related fields.

In addition to the private lists shown above, you may also browse the department's public mailing lists. **Note that this page is only accessible from within the NYU network.**

GSAS New Student Checklist

The Graduate School of Arts & Science also provides a new student checklist with additional information to help you get started at NYU.

Graduation and Employment Authorization

Applying for Graduation

Students who plan on graduating should apply for graduation on Albert by the beginning of your final semester. It is the student's responsibility to apply for graduation within the specified graduation application period.

- o Apply by clicking the "Apply for graduation" link under Academics in your Student Center.
- o Already applied? Check your application status in your Student Center under Academics by clicking the "View my graduation status" link.

Employment Authorization for International Students

Optional Practical Training (OPT) is temporary employment that is directly related to your major field of study. If you want to work off-campus as an F-1 student, one way to do so is to be approved for OPT. You cannot begin work on OPT until you receive your approval in the form of an Employment Authorization Document (EAD) and it is within the dates listed on your EAD. It takes around 4-6 months to get approved for OPT so please plan ahead. If you have general questions about OPT, please contact your advisor.

See requirements and instructions for applying to OPT at the Office of Global Services website.

Grievances

Students may bring their questions or concerns on any academic or student life issue to the Director of Graduate Studies and/or one of our MS Program Administrators. The student can discuss the matter and share their perspective. The department provides a confidential, supportive environment to discuss matters impacting the student and will seek to assist the student to resolve the issue or direct the student to the proper office for assistance. The department maintains a record of incidents for the purpose of identifying patterns of inappropriate or negligent behavior. Please note that if the student's concern involves discrimination or harassment, the department is obliged to report the issue to the Office of Equal Opportunity, which is the University's neutral unit charged with investigating all such cases.