

# Carnegie Mellon University

## Master of Science in Computational Finance



## Quantitative Finance Alumni

# 2024 CAREER REPORT

To address common questions of many prospective quant finance masters students, we conducted a survey of MSCF alumni to identify key insights on industry segments, job functions, compensation and other career-growth metrics of these finance professionals.

## SURVEY DEMOGRAPHICS

# 203

## SURVEYS COMPLETED

# 77%

MALE

# 22%

FEMALE

# 1%

DID NOT  
SPECIFY

### MSCF GRADUATION YEAR

|           |   |     |
|-----------|---|-----|
| 2017-2021 | → | 47% |
| 2012-2016 | → | 19% |
| 2007-2011 | → | 14% |
| 2002-2006 | → | 11% |
| 1996-2001 | → | 8%  |

### FULL-TIME FINANCIAL EXPERIENCE PRE-MSCF

|           |   |     |
|-----------|---|-----|
| 0 YEARS   | → | 43% |
| <1 YEAR   | → | 16% |
| 1-2 YEARS | → | 17% |
| 3-4 YEARS | → | 14% |
| 5+ YEARS  | → | 10% |



# EXECUTIVE SUMMARY



## INDUSTRY SEGMENTS

The vast majority of MSCF alumni are continuing to follow their passion for finance; 93% are still working in the industry. Investment banking was the dominant segment for first jobs (41%), but lost ground to hedge funds, asset management, and other finance segments for current jobs.



## JOB FUNCTIONS

Quant Research was the most popular first job function (30%) followed by Sales & Trading, Risk Management and Strats & Modeling, with 7 in 10 MSCF graduates starting their careers in these roles. Shifting to current employment, Quant Research maintained the #1 position with Portfolio Management, Sales & Trading and Other job functions rounding out the top four.



## JOB LOCATIONS

85% of respondents started their quant finance careers in the U.S. with 72% working in New York City. For current employment, 10% of those starting their careers in New York City moved to other major U.S. cities including Chicago, Boston, Greenwich and Charlotte.



## TOP SKILLS

We asked MSCF alumni about the most important skills for future quant finance success. Programming was #1 with over 60% of MSCF alumni citing it as a key requirement. Other top-mentioned skills included math & statistics, communication, and data analytics/data science.



## PROGRAMMING

Computer programming is a key capability for MSCF alumni. 84% program/code in their roles with Python cited as the top programming language by nearly half of respondents.



## COMPENSATION

Quant finance is a well-compensated profession with high earnings potential. 82% of respondents currently earn at least \$200,000 and nearly 1 in 3 are making \$400,000 or more. MSCF alumni working in hedge funds and proprietary trading firms are the highest earners, with 97% and 90% respectively making \$200,000 or more.



## PROMOTIONS

Most alumni have enjoyed upward job mobility; 82% of respondents earned at least one promotion and nearly 40% received three or more promotions. Among the most recent MSCF graduates surveyed (2020-2021), more than 6 in 10 have been promoted at least once.



## MSCF VALUE

The majority of alumni have high regard for the MSCF program. 93% of respondents agreed that it was a key factor in their career success with half citing strong agreement.

# INDUSTRY SEGMENTS

## 41% of graduates

started their career in investment banks, followed by other finance and asset management firms rounding out the top three. Investment banking experienced the largest decline from first job to current job with most respondents transitioning to hedge funds.



| First Job Industry Segment | 1996-2008 | 2009-2021 |
|----------------------------|-----------|-----------|
| Asset Management           | 15%       | 15%       |
| Hedge Fund                 | 4%        | 10%       |
| Investment Bank            | 46%       | 40%       |
| Other: Non-Finance         | 2%        | 1%        |
| Proprietary Trading        | 10%       | 12%       |
| Other: Finance             | 23%       | 21%       |

| Current Job Industry Segment | 1996-2008 | 2009-2021 |
|------------------------------|-----------|-----------|
| Asset Management             | 25%       | 14%       |
| Hedge Fund                   | 17%       | 25%       |
| Investment Bank              | 15%       | 26%       |
| Other: Non-Finance           | 15%       | 6%        |
| Proprietary Trading          | 27%       | 16%       |
| Other: Finance               | 2%        | 13%       |

Comparing 1996-2008 and 2009-2021 graduates on first jobs, the two groups are similar except for hedge funds and investment banks. More 2009-2021 graduates started in hedge funds and a lower percentage started in investment banks.

For current jobs, most 1996-2008 graduates are working in asset management and proprietary trading while most 2009-2021 graduates are employed in hedge funds and investment banks.

## INDUSTRY SEGMENTS

***“Be sure you know what you want to do and that a new degree will unlock that. Don’t underestimate the value of networking and don’t ignore the culture of the employers you are considering.***



### **Most MSCF alumni are currently employed in the finance industry.**

However, the percentage of alumni working in non-finance industry segments has grown substantially, increasing from 1% of MSCF graduates’ first jobs to 7% of their current jobs.

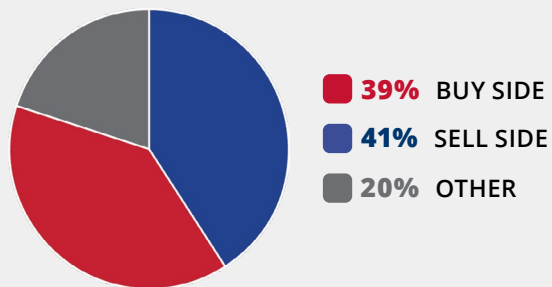
Non-finance roles are diverse and include technology, healthcare, retail and consulting, reinforcing the value of and demand for quant finance skills within other industries.



# INDUSTRY SEGMENTS

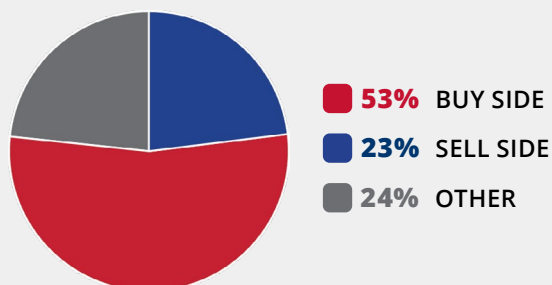
## BUY SIDE VS. SELL SIDE: FIRST JOB

Sell side firms (investment banks) edged out buy side firms (hedge fund, proprietary trading, asset management and insurance) for MSCF graduates' first jobs, with both sectors representing 80% of post-graduate employers. 1 in 5 first jobs were in the "other" sector, which includes fintech and consulting.



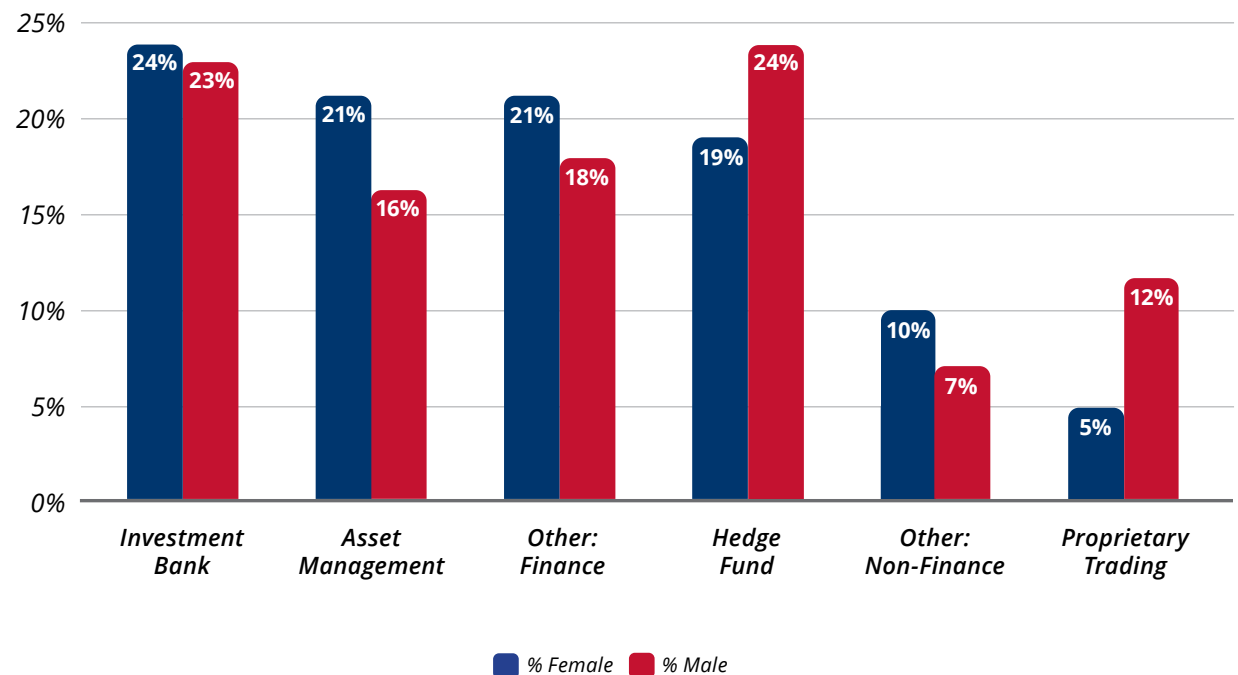
## BUY SIDE VS. SELL SIDE: CURRENT JOB

Over half of MSCF alumni work in buy side roles, representing the largest segment for current roles. More alumni work in "other" sectors (fintech, consulting, insurance, other finance & non-finance) as those in sell side roles.



## Current Industry Segment by Gender

More women are working in asset management, other finance and other non-finance while a higher percentage of men are employed in hedge funds and proprietary trading firms.





# JOB FUNCTIONS

***“Keep an open mind  
because there are many  
career options and not all  
will be obvious or known  
to you today.”***

”

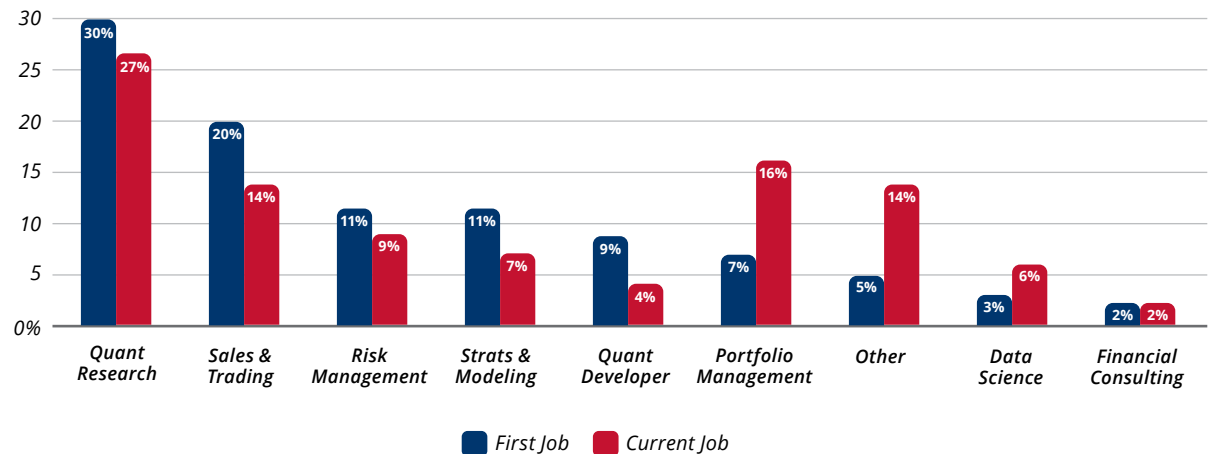
#1

Function:  
**QUANT  
RESEARCH**

## Job Functions

Quant Research was the #1 function for first jobs (30%) followed by Sales & Trading, cited by 20% of respondents. For current jobs, Quant Research maintains its top position with Portfolio Management (16%), Sales & Trading and Other (14% each) rounding out the top four functions.

### Job Function: **First Job vs. Current Job**



# JOB FUNCTIONS

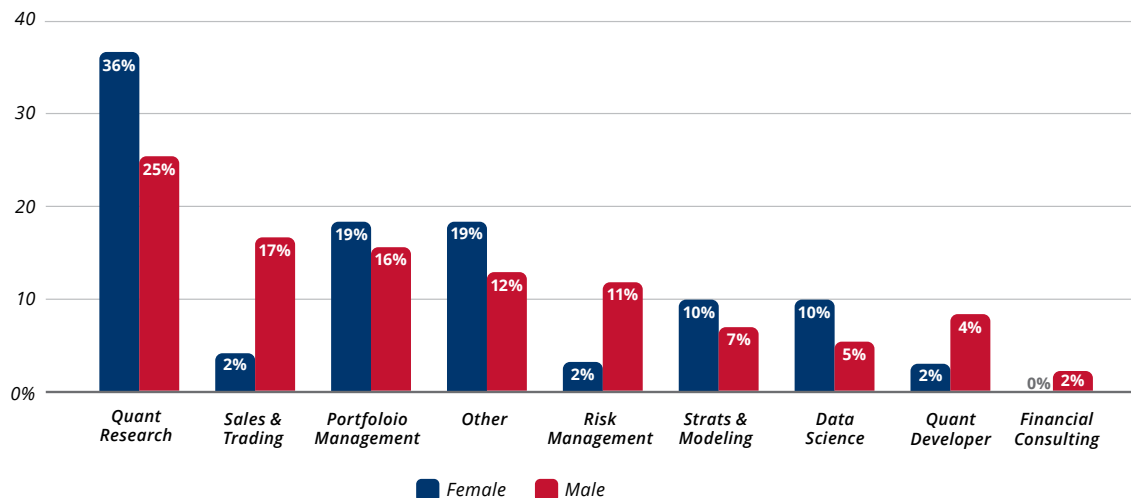
## Job Function by Graduation Cohorts

Comparing 1996-2008 and 2009-2021 graduates on first job functions, a higher percentage of 2009-2021 graduates started in Quant Research and Sales & Trading while more 1996-2008 graduates started their careers as Risk Managers and Quant Developers.

For current jobs, Quant Research dominates 2009-2021 graduates' job functions while 1996-2008 graduates are mostly working in Other and Risk Management jobs.

A higher percentage of women are working in Quant Research, Other and Data Science functions while more men are working in Sales & Trading, Risk Management and Quant Developer job functions.

## Current Job Function: by Gender



| First Job Function   | 1996-2008 | 2009-2021 |
|----------------------|-----------|-----------|
| Data Science         | 0%        | 5%        |
| Financial Consulting | 2%        | 3%        |
| Other                | 6%        | 5%        |
| Portfolio Management | 6%        | 8%        |
| Quant Developer      | 15%       | 8%        |
| Quant Research       | 21%       | 33%       |
| Risk Management      | 21%       | 8%        |
| Sales & Trading      | 21%       | 20%       |
| Strats & Modeling    | 8%        | 12%       |

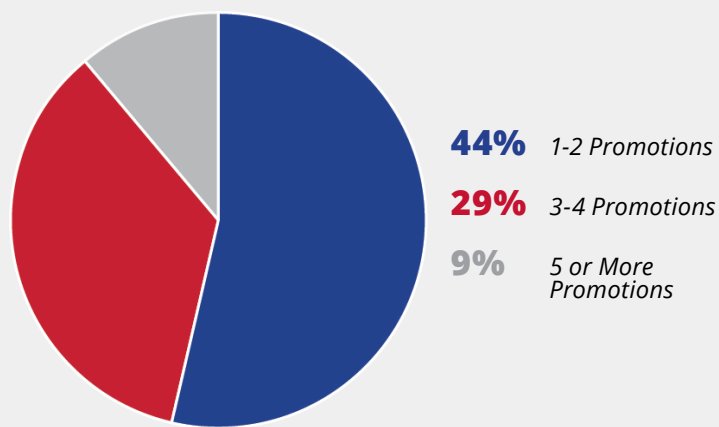
| Current Job Function | 1996-2008 | 2009-2021 |
|----------------------|-----------|-----------|
| Data Science         | 8%        | 5%        |
| Financial Consulting | 4%        | 1%        |
| Other                | 33%       | 8%        |
| Portfolio Management | 15%       | 17%       |
| Quant Developer      | 2%        | 5%        |
| Quant Research       | 2%        | 35%       |
| Risk Management      | 19%       | 6%        |
| Sales & Trading      | 13%       | 15%       |
| Strats & Modeling    | 4%        | 8%        |



## JOB LOCATIONS & PROMOTIONS

*The vast majority of MSCF alumni have earned promotions in their careers.*

82% of respondents were promoted at least once and 63% of the most recent MSCF graduates (2020-2021) have received promotions in the early stages of their quant finance careers.



### First Job Location

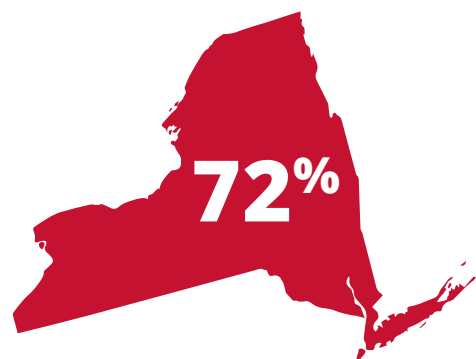


# JOB LOCATIONS & PROMOTIONS

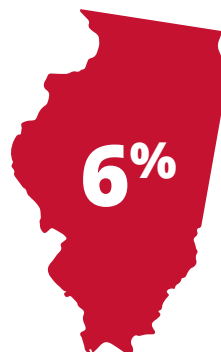
## Top U.S. Locations: **First Job**

**NY was the #1 U.S. state for first jobs**, with 72% working in New York.

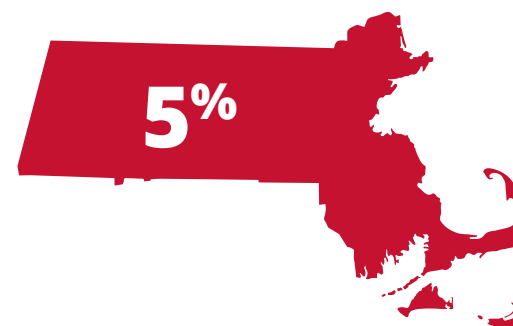
Other top states include Illinois (6%) and Massachusetts (5%).



NEW YORK



ILLINOIS



MASSACHUSETTS



## Top Locations: **Current Job**

**78% of MSCF alumni are currently employed in the U.S.** New York City represents **62%** of current job locations, a decrease of 10% as alumni moved to other major U.S. cities including Chicago, Boston, Greenwich and Charlotte. Internationally, England saw the largest increase among all countries (+120%).

# COMPENSATION

**Quant finance professionals are well-compensated** (salary, bonuses, stock options and other monetary compensation), with 82% of MSCF alumni earning at least \$200,000 annually. Nearly 1 in 3 are making \$400,000 or more and 1 in 5 earn over half a million dollars in annual total compensation.

| Compensation          | First Job |     | Current Job |     |
|-----------------------|-----------|-----|-------------|-----|
| \$ 50,000 – \$ 75,000 | 4.8%      | 78% | 0.0%        | 11% |
| \$ 75,000 – \$100,000 | 13.3%     |     | 1.8%        |     |
| \$100,001 – \$125,000 | 25.9%     |     | 0.6%        |     |
| \$125,001 – \$150,000 | 22.3%     |     | 5.4%        |     |
| \$150,001 – \$175,000 | 11.4%     |     | 3.0%        |     |
| \$175,001 – \$200,000 | 8.4%      | 18% | 6.6%        | 40% |
| \$200,001 – \$225,000 | 4.8%      |     | 10.8%       |     |
| \$225,001 – \$250,000 | 1.8%      |     | 4.8%        |     |
| \$250,001 – \$275,000 | 1.2%      |     | 7.8%        |     |
| \$275,001 – \$300,000 | 1.8%      |     | 9.6%        |     |
| \$300,001 – \$350,000 | 1.8%      | 3%  | 5.4%        | 24% |
| \$325,001 – \$350,000 | 0.0%      |     | 7.2%        |     |
| \$350,001 – \$375,000 | 0.0%      |     | 3.6%        |     |
| \$375,001 – \$400,000 | 0.0%      |     | 2.4%        |     |
| \$400,001 – \$425,000 | 1.2%      |     | 5.4%        |     |
| \$425,001 – \$450,000 | 0.0%      | 1%  | 2.4%        | 25% |
| \$450,001 – \$475,000 | 0.0%      |     | 1.2%        |     |
| \$475,001 – \$500,000 | 0.6%      |     | 1.2%        |     |
| Over \$500,000        | 0.6%      |     | 20.5%       |     |

***“You are getting paid and will be promoted by making recommendations. At the end of day, your job will be crafting a logical story with numbers.”***

## Compensation by Gender

88% of men earn over \$200,000 (vs. 62% of women) and 33% of men earn \$400,000 or more (vs. 21% of women). However, this may be partly attributed to the high percentage of women in asset management, other finance and non-finance, which are among the relatively lower-earning segments.

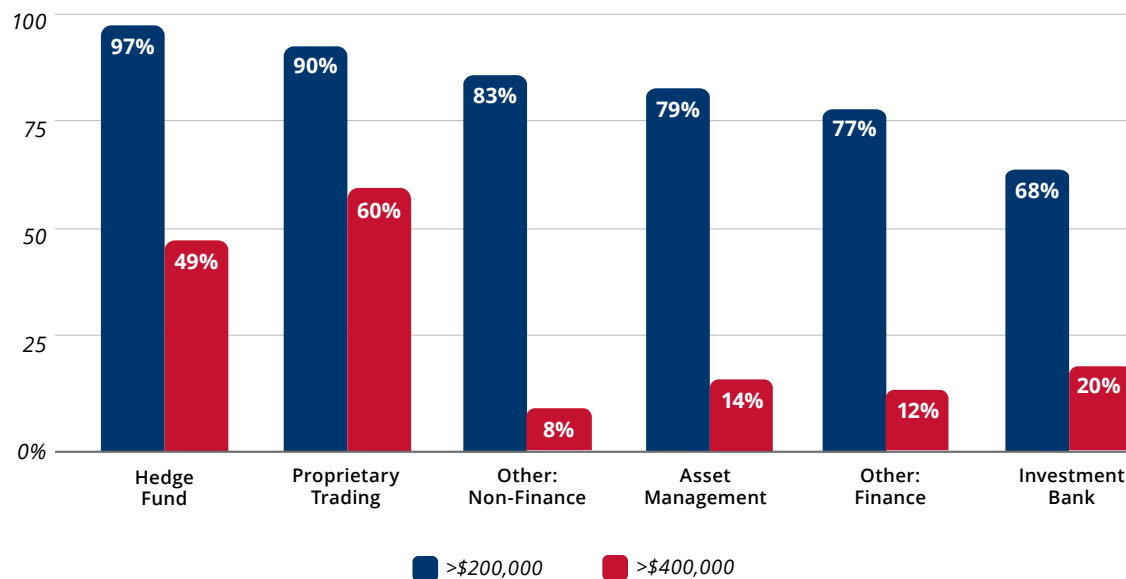


# COMPENSATION

## Hedge fund and proprietary trading are the highest-earning segments

Alumni working in hedge funds and proprietary trading firms have the highest percentages earning more than \$200,000 and \$400,000 annually. Alumni employed in other finance and non-finance segments have the lowest percentages earning more than \$400,000 annually.

### Compensation by Industry Segment



***"Don't chase just the highest starting pay. Look at the team culture, team's growth trajectory, promotion potential, and make sure that the work is interesting to you."***

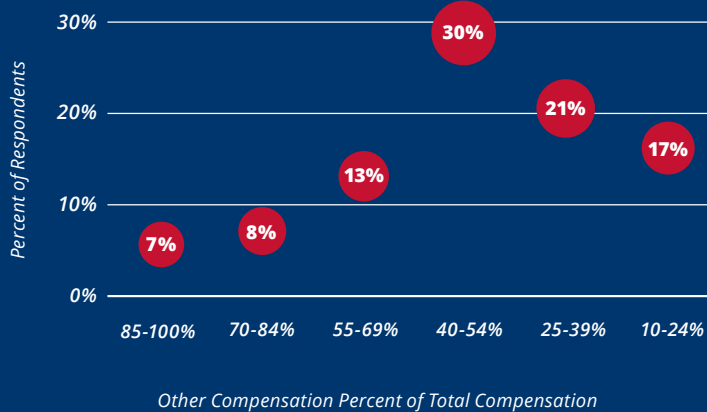
### No Full-Time Experience Necessary

Note that alumni with no full-time financial industry experience before enrolling in the MSCF program can be as successful as those with experience. Of the respondents with no full-time financial industry experience pre-MSCF, 81% are earning more than \$200,000 and 1 in 3 are earning more than \$400,000 annually.

# COMPENSATION

The majority of MSCF alumni receive other forms of compensation in addition to their base salaries, with nearly **6 in 10 citing other compensation comprising 40% or more** of their current annual earnings. The highest percentage of respondents (30%) earn 40%-54% of their compensation outside of their base salaries.

## Other Compensation

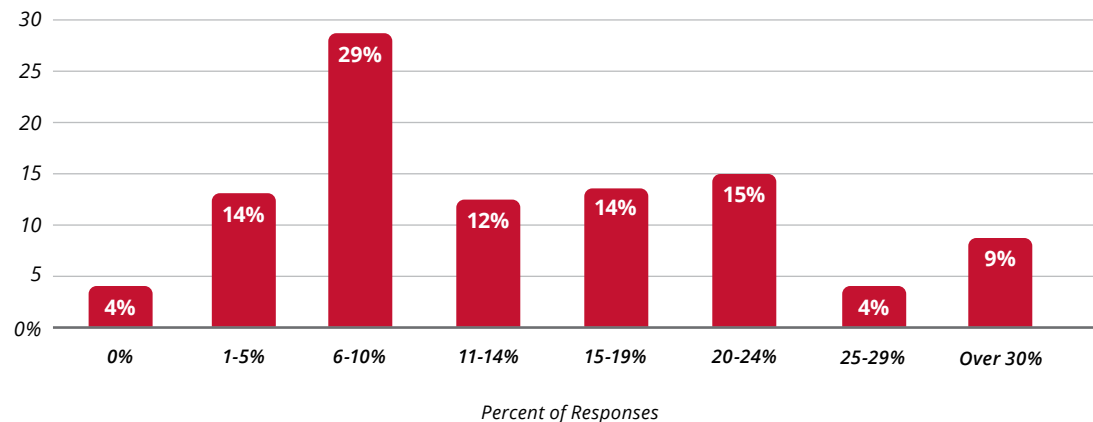


## Annual Compensation Increases

Nearly all MSCF alumni reported increases in annual compensation. Over half saw an average year-over-year compensation increase of at least 11%, with over 1 in 4 reporting an average increase of at least 20% per year.

The most recent MSCF alumni from the classes of 2020 and 2021 are no exception to receiving accelerated compensation increases. 61% reported an average year-over-year compensation increase of at least 11% and 4 in 10 reported an average increase of at least 20% per year.

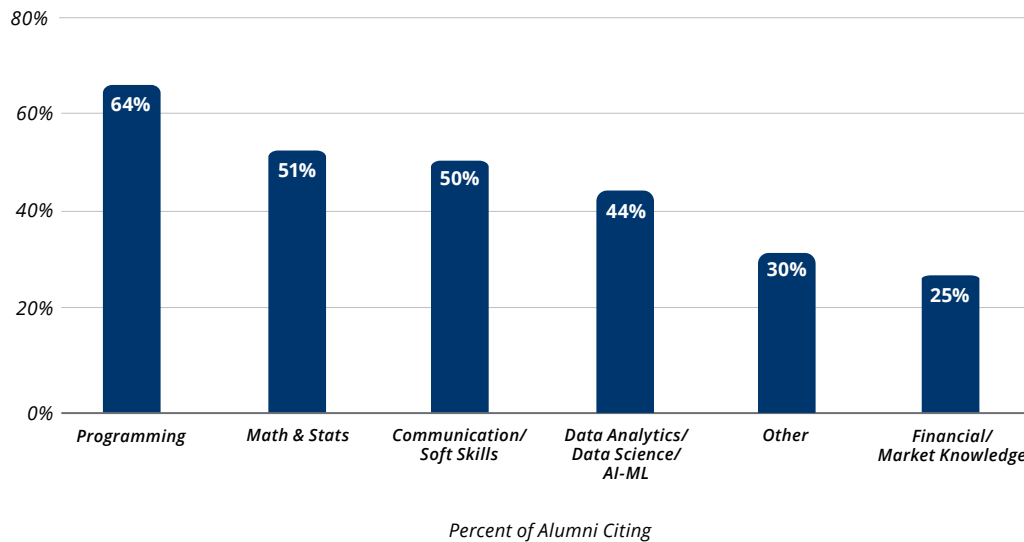
## Average Year-Over-Year Annual Compensation



# MSCF VALUE AND TOP SKILLS

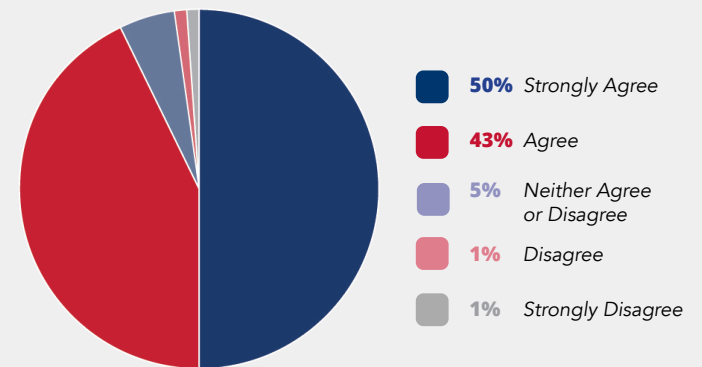
## We asked MSCF alumni about the most important skills for future quant finance success.

Programming was the top-mentioned skill with 64% of MSCF alumni citing it as a key requirement for success. Math/statistics and communication/soft skills were #2 and #3 respectively, with half of respondents identifying them as critical skill sets. In the “Other” category, the top-mentioned skills included critical thinking, problem solving and on-the-job learning.



## MSCF Value

The majority of survey respondents have high regard for the MSCF program. In fact, 93% agreed that it was a key factor in their career success with 50% citing strong agreement.



Even most of the alumni from the first five MSCF graduating classes (1996-2000) value their MSCF education, with 88% agreeing it was a key factor in their career success.

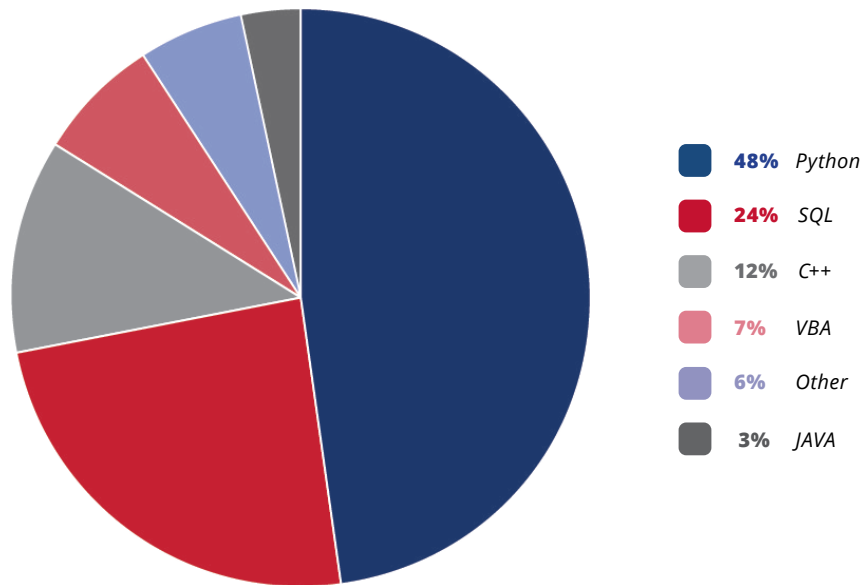


## MSCF VALUE AND TOP SKILLS

**Computer programming is an increasingly important skill set in the quantitative finance industry.**

84% of respondents program/code in their roles, with Python cited as a top programming language by nearly half of MSCF alumni.

### Programming Languages

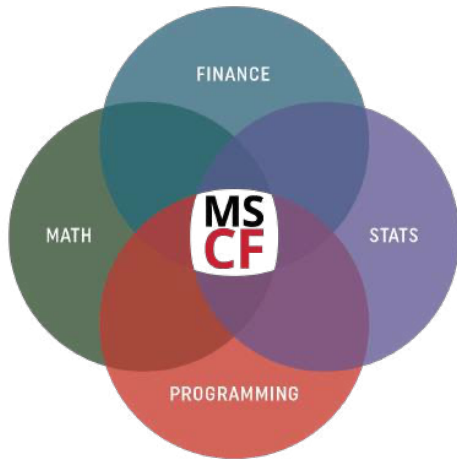


**“The MSCF program positioned me extremely well to succeed as a quant and, even seven years after graduating, I often go back to my MSCF notes when facing new quant problems.”**

**84%**

**PROGRAM/  
CODE**  
In Their Roles

# CONCLUSION



**Quantitative finance is a dynamic and diverse career that is both professionally and financially rewarding.**

Quants are employed across a wide range of finance segments and job functions. They have also achieved success leveraging their skill sets in other industries, largely due to their quantitative, computational and interpersonal strengths.

Job advancement and promotions are the norm, with long-term compensation delivering a high return-on-investment for those with well-regarded quantitative finance master's degrees.

## MSCF PROGRAM

**The Carnegie Mellon University MSCF program has an unrivaled reputation in the quantitative finance field for training professionals with the interdisciplinary skills required for success in the finance industry.** The brand has been built over the past **30 years by 2,000+ alumni**, many of whom are top performers on Wall Street and beyond.

If you have a keen interest in the financial markets and a desire to leverage your technical skills to make an impact in the global economy, MSCF could be your path to a highly rewarding career in quantitative finance.

*The top-ranked MSCF program is an industry leader in preparing students for highly successful careers in quantitative finance through a unique combination of customized curriculum, pioneering faculty and a full-service career center.*