

IMPORTANT INFORMATION!

Missed a QMI Info Session? No Problem!

- We know some of you couldn't attend a QMI info session before the second USIT Info Session!
- **Application Requirement Modification:** If you attended a USIT Info Session **AND** a USIT Coffee Chat, you can still apply. Missing a QMI session won't penalize you!
- Here is our presentation to help you learn more about QMI. Our website homepage also has a QMI overview.
- **Meet the Team:** Book a **Brown Bag** session with QMI leadership, stop by the **USIT Coffee Chat on Sunday, Aug 31 at 11 AM at McCombs Atrium**, or come to the **USIT Women's Brunch on Saturday Aug. 30th 10-11:30 PM, Tower Lounge**
- Questions? Email any of the contacts below – we'd love to hear from you!

BROWN BAGS SIGN UP!



Contact Us!

Siddhartha Rana: ssr2584@utexas.edu

Avani Singh: avanisingh@utexas.edu



Quantitative Market Intelligence Info Session

*SIGN-IN at the QR Code Below
Fall 2025*



Note: This presentation includes **Website Notes!**
These are our written commentary on a slide to help guide you, just like what we would have shared verbally during the session.



SECTION I

Introduction – Who We Are

SIGN-IN AT: <https://tinyurl.com/qmi2025>



Quantitative Market Intelligence

AN INTERNAL DIVISION OF USIT

WHAT IS

The University Securities Investment Team is a ***premier investment team*** that manages \$50K+ with 300+ members. It focuses on fundamental analysis through constructing investment theses and company valuations.



Where QMI Comes In

Quantitative Market Intelligence is a special fund of the USIT Foundation that focuses on the application of ***data science to financial markets***

- Our Value Proposition to Members
 - Learn data science, mathematics, and finance skills
 - Work in teams of driven individuals to pursue interesting projects
 - Find a group of interesting, curious, and smart people to call home
- Our Value Proposition to USIT
 - Integrate quantitative insights into what USIT does
 - Offer quantitative content without diluting core curriculum
 - Data Science/CS AG





The Leadership Team

DIRECTORS FOR THIS YEAR



Siddhartha Rana
EXECUTIVE DIRECTOR



Avani Singh
EXECUTIVE DIRECTOR



Karthik Bobbili
SENIOR INTELLIGENCE
ANALYST



Alicia Yanez
SENIOR INTELLIGENCE
ANALYST



Mayank Gulecha
SENIOR INTELLIGENCE
ANALYST



Adrian Popps
SENIOR INTELLIGENCE
ANALYST



Xavier Leffler
SENIOR INTELLIGENCE
ANALYST



Shreyas Potta
SENIOR INTELLIGENCE
ANALYST



Kaden Williford
SENIOR INTELLIGENCE
ANALYST



The Leadership Team

Executive Directors

Executive Director

I lived in Japan growing up and Japanese was my first language.



About Me

- Major: Finance + BHP
- Year: Junior
- Interests: Yoga, Sweet tea, cooking, napping on the couch
- Career: Private Equity

About Me

- Major: Finance + Math
- Year: Junior
- Interests: Golf, The Sopranos, Football, Pickleball, Cubing, Chess, Trading
- Career: Quant Trader at IMC Trading



Executive Director

I ate 52 pieces of sushi at an all you can eat place in Houston, felt great after





I am considered a
“lord” in Irish law.



I had a pet deer in
my neighborhood.



I once totaled a
snowmobile.



I play the Ukulele.



I like to play
ultimate frisbee.



I speak 5
languages.



In Yosemite, a bear
untied my shoe.



Section II

Curriculum

"Slightly more useful than school"



Foundational Learning

INTRO TO FINANCE & MARKETS

- Understand the structure of various financial markets and its players.
- Explore exchanges, orders, order books, liquidity, market making vs taking, and how participants trade with each other.
- Understand the purpose of markets, efficient market hypothesis, and traditional drivers of equities.

INTRO TO PYTHON

- Understand the advantages of using Python for data science and programming
- Explore Python under the hood and learn about internals.
- Common uses of Python for data science and machine learning.
- Conclude with a mini project that looks at a trading strategy and diagnoses why it lost money.

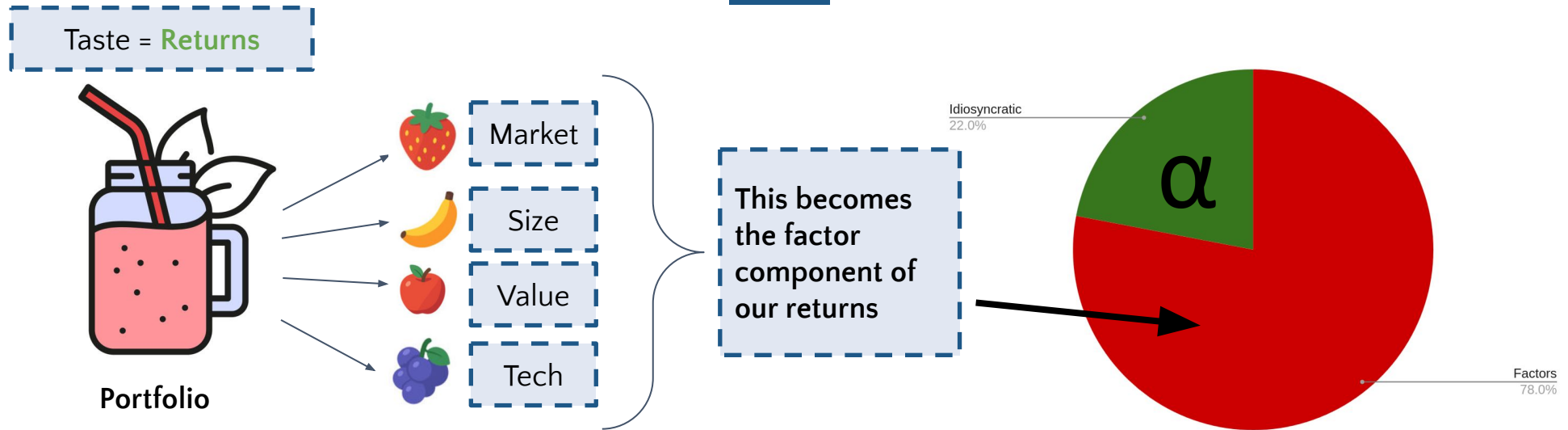
INTRO TO DATA SCIENCE

- Understand how to explore data (EDA, validation, reporting)
- Explore and apply simple models like regressions to make predictions.
- Understand high level machine learning applications for future use.
- Apply data science skills to a mini project that predicts earnings growth using alternative data sources.

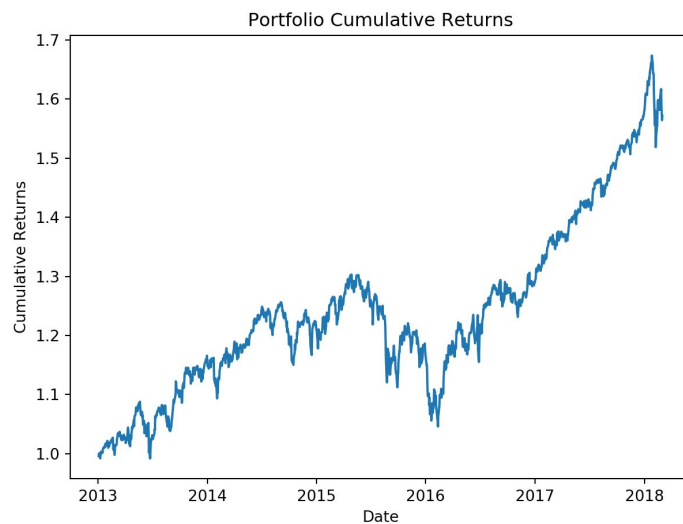
Website Presentation Note: Our first three weeks of the semester will be spent building foundational knowledge. Our Senior Analysts and Senior Advisors will lecture on these three topics (one per week) and we will have interactive mini projects to gauge understanding of the material. We won't make you experts in three weeks, but we will provide you with the basic tools you need to complete our projects for the semester!



Project 1: USIT Portfolio Factor Analysis

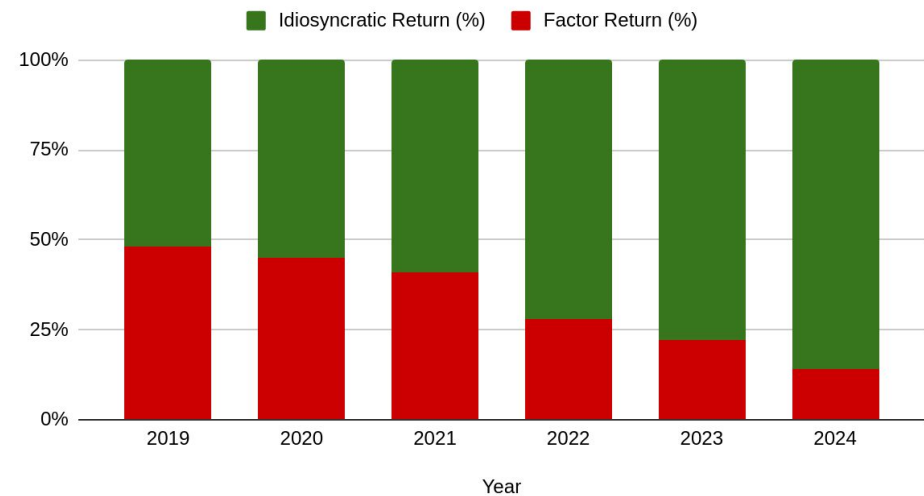


Guiding Question: Is USIT's Performance True Alpha or Just Market Exposure?



Returns
are due to
various
factors

Example Factor Return vs Idiosyncratic Return (%)



Project 1: USIT Portfolio Factor Analysis

Goals

- Deliver a report to USIT that identifies historic idiosyncratic return/risk and the factor return/risk.
- Suggest changes to the stock selection process based on factor analysis.
- Learn about factor return decomposition and how to apply to real portfolios through recreating factor return portfolios and breaking down returns.

Our Process

- Collect historical USIT holdings and pricing data. Compute portfolio returns over time and calculate basic statistics (mean, variance, Sharpe).
- Use factor return portfolio vectors and regression to decompose returns into factor-driven and idiosyncratic portion.
- Identify which factors are driving returns, highlight areas where USIT has alpha, and present recommendations.

Website Presentation Note: Don't worry if you can't understand anything about factor analysis! **We will help you out** and our resources will provide you with a thorough understanding of portfolio decomposition

We build knowledge from 0 to 1 so please don't be intimidated! Many of our members did not know anything about computer science, finance, or data science before applying.



Project 2: Kalshi Trading Strategies

Kalshi is a regulated prediction market where users can buy and sell “shares” which are the probabilities of events occurring. It is accessible to students and can be used to deploy trading strategies.



Atlanta 55% ▲ 3
Yes 53¢ No 48¢

Trade Yes Trade No Graph

	Price	Contracts	Total
Asks	58¢	174	\$456.44
	57¢	467	\$355.52
	56¢	151	\$89.33
	53¢	9	\$4.77
Trade Yes Last 55¢			
Bids	52¢	219	\$113.88
	51¢	2	\$114.90
	50¢	153	\$191.40
	49¢	200	\$289.40

Cleveland vs Minnesota (Game 1) Pro Baseball	Cleveland 51¢ Minnesota 49¢	52¢ 53¢	\$306,963,985	+
Atlanta vs Washington (Game 1) Pro Baseball	Atlanta 53¢ Washington 45¢	48¢ 57¢	\$306,963,985	+
San Diego vs Seattle Pro Baseball	Seattle 1¢ San Diego 1¢	1¢ 1¢	\$306,963,985	+
Detroit vs A's Pro Baseball	A's 95¢ Detroit 7¢	7¢ 95¢	\$306,963,985	+
Cincinnati vs Los Angeles D Pro Baseball	Los Angeles D 1¢ Cincinnati 1¢	1¢ 1¢	\$306,963,985	+
Bitcoin price today at 5pm EDT?	\$110,250 or above 52¢ \$109,750 or above 62¢	56¢ 46¢	\$287,315,718	+
Fed decision in September?	Cut 25bps 74¢ Fed maintains rate 22¢	27¢ 79¢	\$165,178,612	+
Sinner vs Kopriya US Open Men Singles	Jannik Sinner 98¢ Vit Kopriya 3¢	3¢ 98¢	\$138,438,835	+
Fucsovics vs Shapovalov US Open Men Singles	Denis Shapovalov 53¢ Marton Fucsovics 48¢	48¢ 54¢	\$138,438,835	+
Halys vs Goffin US Open Men Singles	Quentin Halys 64¢ David Goffin 37¢	37¢ 64¢	\$138,438,835	+
Gaston vs Mochizuki US Open Men Singles	Shintaro Mochizuki 62¢ Hugo Gaston 39¢	39¢ 62¢	\$138,438,835	+
Bublik vs Cilic US Open Men Singles	Alexander Bublik 68¢ Marin Cilic 33¢	33¢ 68¢	\$138,438,835	+
Altmaier vs Medjedovic US Open Men Singles	Hamad Medjedovic 75¢ Daniel Altmaier 27¢	26¢ 75¢	\$138,438,835	+
O'Connell vs de Minaur US Open Men Singles	Alex de Minaur 93¢ Christopher O'Connell 8¢	8¢ 94¢	\$138,438,835	+



Event: Best AI Model in August

Project 2: Kalshi Trading Strategies

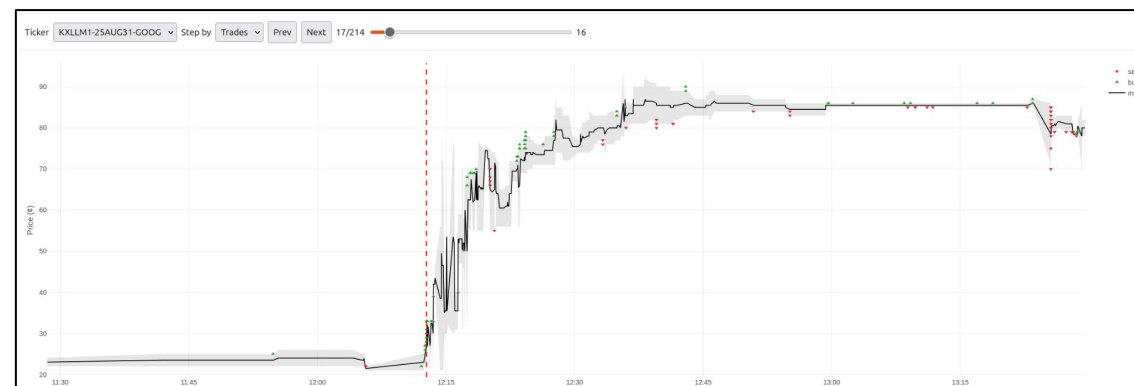


Recent Trades

time	price	count	side
12:13:09 PM	59	46	no
12:13:09 PM	59	10	no
12:13:09 PM	59	74	no
12:13:09 PM	64	88	no
12:13:09 PM	63	88	no
12:13:09 PM	63	45	no
12:13:09 PM	63	73	no
12:13:09 PM	63	61	no
12:13:09 PM	62	88	no
12:13:09 PM	62	23	no
12:13:09 PM	62	33	no
12:13:09 PM	61	54	no

Recent Trades

time	price	count	side
12:12:34 PM	27	166	yes
12:12:34 PM	27	20	yes
12:12:43 PM	28	4	yes
12:12:43 PM	27	11	yes
12:12:43 PM	33	551	yes
12:12:43 PM	31	400	yes
12:12:43 PM	30	809	yes
12:12:43 PM	29	12	yes
12:12:43 PM	29	159	yes
12:12:43 PM	28	3	yes
12:12:43 PM	28	2	yes
12:12:43 PM	28	49	yes



Project 2: Kalshi Trading Strategies

Goals

- Explore various markets on Kalshi and find systematic ways to trade these markets (stat arb, pairs trades, fundamental analysis, gambling)
- Build tools to execute these strategies (screeners, low latency trading client, colocation)
- Learn about how to exploit market inefficiencies and capitalize on edge.

Our Process

- Collect public Kalshi trades and order book information to replay and find patterns.
- Build screeners to trade big moving markets and find signals to detect statistically significant mean reverting processes.
- Build upon existing rust client architecture for order execution and deploy strategies for live testing (hopefully making money)

Website Presentation Note: Our second project allows our members to develop Kalshi trading strategies under the guidance of Senior Analysts. Junior Analysts will pick out events and markets on Kalshi that interest them and will collect data, formulate a hypothesis, and implement an algorithmic/discretionary trading strategy to test their edge. This is a great opportunity to implement data science skills and trade against other intelligent market participants!



SECTION VI

This is a Bit Crude

SIGN-IN AT: <https://tinyurl.com/QMI2025>

Website Presentation Note: QMI competes in trading competitions and strategy pitch competitions. Here is a strategy that we submitted to the **Southeastern Hedge Fund Competition**, which we compete in every year.

Our Junior Analysts will split into groups of 4-5 and submit a trading strategy in the Spring Semester!



This is a Bit Crude

Strategy Thesis and Preview

This is a Bit Crude Model

Statistically Significant Alpha | High Excess Returns | Dependable Performance

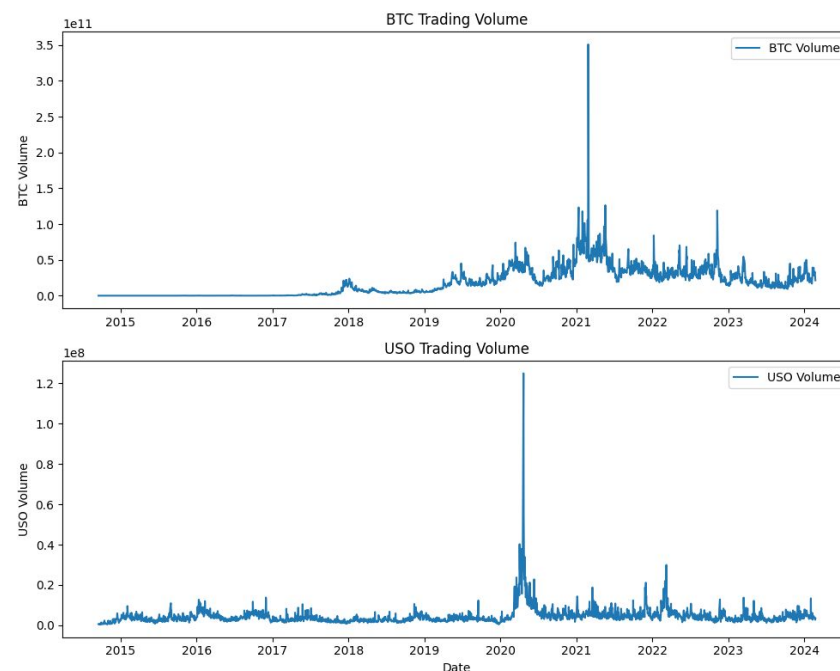
This strategy leverages intraday momentum in the oil market by utilizing cryptocurrency price movements as triggers, capturing alpha generated by the interplay between market forces and the rebalancing of oil-linked ETFs like the USO.

1.473

Yearly Sharpe
Ratio

8.9%

Yearly Return



This is a Bit Crude

Formulation and Definition

BTC and USO Trading Close



Momentum Definition

The strategy identifies profitable opportunities by leveraging the observed intraday momentum in the oil market, where early price movements often predict the direction of subsequent trading hours.

Crude Oil Strategy

- Involves tracking early morning oil price movements and scaling positions in response to concurrent shifts in cryptocurrency prices,
- Long or short positions based on combined momentum signals.

Hypothesis: Early oil price movements and concurrent cryptocurrency trends significantly predict the direction of intraday momentum, allowing for strategic entry and exit points

Analysis of Crude Strategy Performance from 2012-2021

Volatility and Jump Size

$$RV_t = \sum_{k=1}^n r_{t,k}^2$$

$$\hat{J} = \sqrt{(RV_t - BV_t) \times I(ZJ_t \geq \Phi_{\tilde{\alpha}}^{-1})}$$

$$BV_t = \frac{\pi}{2} \frac{n}{n-1} \sum_{k=2}^n |r_{t,k}| |r_{t,k-1}|$$

Findings and Conclusion

- Minimized costs and fees through selective, single-entry-exit trades.
- Potential for amplified returns due to the USO ETF's scale and concentrated exposure.
- Improved accessibility compared to direct oil futures trading.
- Effectiveness of the strategy can be tested through backtesting and live simulations, considering both returns and associated risks.
- Estimated performance includes a Sharpe Ratio of 1.473 and an overall return of 117%.
- Opens avenues for further refinement and exploration in the oil market.

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Avg.
Strategy Returns	9.14%	2.20%	7.45%	18.11%	7.58%	6.06%	5.62%	10.16%	14.29%	8.33%	8.89%
<i>S&P 500 Returns</i>	<i>13.41%</i>	<i>29.6%</i>	<i>11.39%</i>	<i>-0.73%</i>	<i>9.54%</i>	<i>19.42%</i>	<i>-6.24%</i>	<i>28.88%</i>	<i>16.26%</i>	<i>26.89%</i>	<i>14.20%</i>
Strategy St. Dev	0.03	0.019	0.025	0.061	0.059	0.03	0.034	0.045	0.119	0.047	0.0469
<i>S&P 500 St. Dev</i>	<i>0.81</i>	<i>0.70</i>	<i>0.73</i>	<i>0.98</i>	<i>0.79</i>	<i>0.43</i>	<i>1.11</i>	<i>0.79</i>	<i>2.11</i>	<i>0.82</i>	<i>0.93</i>
Strategy Sharpe Ratio	2.31	0.1	2.14	2.63	0.95	1.35	1.07	1.81	1.03	1.34	1.473
<i>S&P 500 Sharpe Ratio</i>	<i>0.70</i>	<i>1.12</i>	<i>1.03</i>	<i>0.63</i>	<i>0.75</i>	<i>1.52</i>	<i>0.47</i>	<i>0.78</i>	<i>0.30</i>	<i>0.86</i>	<i>0.76</i>

SECTION III

Structure

SIGN-IN AT: <https://tinyurl.com/OMI2025>



Organization Structure

HOW THINGS WILL WORK

Meeting Structure

Monday & Wednesday Evenings

CURRICULUM MEETINGS

- First three weeks will have our foundational workshops.
- For the next 5 weeks we will focus on working on the USIT Factor Decomposition Report.
- Until the semester ends we will work on Kalshi strategies and enjoy guest lectures from our senior advisors on relevant topics.

Office Hours

Office Hours Sunday @ 3:00PM-4:00PM

POST UP & CHILL

- Interact with QMI Senior Analysts in a relaxed environment
- Debriefs on workshops, assignments, and semester projects
- Casual social events afterwards

Socials

Semester Long

SOCIAL ACTIVITIES

- Plan to host one large social event a month, with each Senior Analyst organizing
- We will also attend USIT socials to integrate with their student body.
- Random popup socials will be frequent throughout the year!

Spring Semester

Spring Semester

SYSTEMATIC TRADING

- Compete in Southeastern Hedge Fund Competition, Texas Stock Pitch, IMC Prosperity, & more
- Complete a group research project / paper
- Continue developing computer science and data science skills



Our Hopes for This Year

COMPLETE INTERESTING RESEARCH PROJECTS

- Pose thought-provoking questions and provide significant answers
 - Projects scale with your skillset
 - Begin to look at fundamental analysis through a quantitative lens and look differently at problems
- Demonstrate final products to USIT and professionals

DISCOVER WAYS TO GENERATE ALPHA

- Demonstrate mastery of fall semester curriculum through back-testing fundamentally relevant trading strategies
 - Send 2-3 teams to represent UT at the Southeastern Hedge Fund Competition
 - Use spring semester skills to create proprietary datasets

BUILD THE COMMUNITY THAT SHARES THIS INTEREST

- Build an open community of people that enjoy data science and finance
- Encourage friendship and mentorship across majors and classes
- Continue an alumni network that will help future generations

Website Presentation Note: This is a general overview of the goals that we have this year. We really want to emphasize that we do not require any technical background or experience to apply to QMI!

We aim to build a community of students passionate about financial markets — a place to learn, grow, and have fun together beyond the classroom.



SECTION III

Culture

SIGN-IN AT: <https://tinyurl.com/QMI2025>

Website Presentation Note: While QMI is primarily focused on teaching quantitative finance skills, many of our members pursue careers such as **investment banking, consulting, software engineering, graduate school, sales and trading, and quant**. In the next slide you can see some of the places where our alumni have worked.

We are also more than just classroom education. We prioritize our socials and are truly committed to building a community at QMI.





SALEM CENTER
FOR POLICY



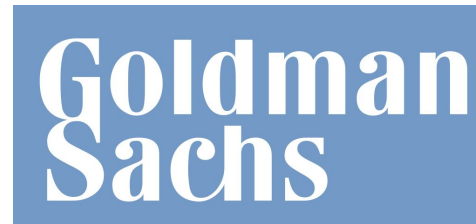
accenture



Apax



facebook



NOMURA

**Hewlett Packard
Enterprise**



ALPINE



CENTER | VIEW PARTNERS

ATOM



More Than Quant

WHAT YOU CAN GET OUT OF QMI



Fun



Family



Holidays

Competitions



Socials



PART VII

Recruiting Process

SIGN-IN AT <https://tinyurl.com/QMI2025>

Website Presentation Note: Our applications are currently open! Here is the [link](#) which is also available at usitqmi.com.

Application Link: <https://forms.gle/wGdTZBEf58BZTUNe6>

Reminder that applications are due by September 2nd, 11:59 PM. Please submit applications on time!



Who We're Looking For

ANSWERING THE QUESTIONS ON YOUR MIND

What Level of Experience Do I Need?

NO EXPERIENCE

- That's okay! Our goal is to teach you. We're looking for you to have drive and be a quick learner

SOME EXPERIENCE

- Hopefully, we can help you further develop your skills and enable you to use them to do awesome, meaningful things. We're just hoping you're interested in doing things

A LOT OF EXPERIENCE

- We want to make you even stronger by helping you in either finance or data science. You're the right fit if you're ready to be a mentor and take initiative in areas you're interested in

How Can I Stand Out?

- What **Doesn't** Matter:

- Major
- Class (Class of 2028/2029)
- Experience Level

- What **Does** Matter:

INTEREST IN SOLVING MODERN PROBLEMS
(INTELLECTUAL CURIOSITY)

INITIATIVE & CHALLENGE TAKER

WILLINGNESS TO HANG OUT
(CULTURAL FIT)

WANTS TO CHANGE THE FUTURE OF FINANCE AT UT



Recruiting Timeline

WHERE TO GO NEXT

1

Meet our leadership
and other USIT
members at events

2

To apply and for more
info, visit our website
www.usitqmi.com

QMI Info Session #1

Wednesday, Aug. 27th
7:00–8:00 PM, UTC 2.102A

QMI Info Session #2

Thursday, Aug. 28th
6:00–7:00 PM, FAC 21

Woman's Brunch

Saturday, Aug. 30th
10–11:30 PM, Tower Lounge

USIT Coffee Chat #1

Thursday, Aug. 28th
5–6 PM, McCombs Atrium

USIT Coffee Chat #2

Friday, Aug. 29th
2:30–3:30, McCombs Atrium

USIT Coffee Chat #3

Sunday, Aug. 31
11 – 12 PM, McCombs Atrium

1

APPLY – 8/25-9/2

Apply at usitqmi.com.
Applications have a hard
deadline at midnight on
September 2nd so make sure
to get working now.

2

MEET – WEEK OF 9/01

Select applicants will be
invited to join us at a game
night to help us get to know
you before interviews.

3

INTERVIEW – 9/6 - 9/7

Interviews will be held on
Sat/Sun and will be tailored to
your level of experience and
background.

