ABOUT THE MACSS SCHOLARS PROGRAM

The MaCSS Scholars program is a small but vibrant community of Math, Computer Science, and Statistics majors at University of Michigan. Students enter the program as rising second-years or recent community college transfer students. The NSF-funded program (DUE-2221516) aims, specifically, to support students from low-income backgrounds through their major and beyond. Support includes scholarships (up to $10K/year), an intellectually engaging intensive summer institute, and much more. The program components all work toward the same goal: that all scholars complete their intended major, with competitive transcripts and resumes, giving them the ability to pursue their chosen professional or academic path post-graduation.

GOALS OF THE SUMMER INSTITUTE

- Build a rich, social-academic community
- Inspire, engage, and excite scholars with hands-on, novel, and challenging project-based experiences in their disciplines
- Increase sense of belonging at UM and discipline.
- Prepare scholars for key courses, including Linear Algebra (math), Probability (stats), and Discrete Mathematics (CS).
SUMMER 2023 HIGHLIGHTS

SCHOLARS ATTENDED

14

Out of a selected cohort of 16 students, 14 were able to attend the summer institute. We also accepted two “late admit” scholars who will attend in Summer 2024.

GUEST COLLOQUIA

13

A key feature of the summer institute was exposing scholars to diverse disciplinary perspectives. We were excited to offer 13 guest colloquia on a wide variety of topics over the four weeks.

NUMBER OF FIELDTRIPS

4

A key piece of the summer institute is building community. Wednesday afternoons were reserved for field trips! We went on a local hike, to the Detroit Institute of Arts, MCity, and Kayaking on the Huron River.
ABOUT THE 14 SCHOLARS

1. Math Major
2. Cog. Sci Majors
3. Data Science and Stats Majors
4. Comp. Sci Majors
5. Non-Traditional Students (>22 YO)
6. Transfer Students
7. Women
8. In-State Students

KEY INSTITUTE ACTIVITIES

- Daily Puzzle
- Inquiry-Based Learning Course on Probability (2 weeks)
- Coding Lab (Matlab)
- Daily Guest Colloquia
- Student-led Projects (2 weeks)
- Mentor Mixer
- Dorm living and selected catered meals
- Weekly Field Trips
Why did you choose U-M? "Out of all the schools I was accepted to, U-M has the most unique, major-specific opportunities to ensure success in my career path. I wanted a big school with endless opportunities for me to build character as a student and also as a person."

What other communities do you belong to? Outside of MaCSS, I am heavily involved with the Latinx community. I serve on the executive board for the school’s first Latinx student organization, La Casa. My position is to plan and execute our annual leadership academy (LCLA), where Latinx underclassmen have the opportunity to freshen up their professional development and become Latinx leaders on campus."

What did the MaCSS Summer Institute mean to you? “The MaCSS Summer Institute was something that unexpectedly changed my life here on campus. I didn't realize how much of an impact the program had on me until it was over. MaCSS has not only helped me financially, but also helped me become more passionate as a student. The rare one-on-one time I had with distinguished professors who were genuine and pushed me to think critically was something I thought I wouldn’t get to experience at such a big school. I truly gained a support system with the relationships that I have made with peers and faculty on campus."
Application of Markov Chains to Model Strategies in the Game of Risk

Thomas M. and Maxwell D.

Abstract: Multiplayer strategy games have shown to provide useful applications of artificial intelligence (AI) methods (Assunção & Ferrari, 2022; Bauer, 2023; Gillenwater, 2022). Building upon current advancements in the field, Risk is a popular turn-based board game that holds potential for study. Due to the stochastic nature of the attack process and adherence to the Markov Property, a probabilistic approach can be pursued that employs a Markov Chain to answer questions on what an optimal attacking/defending strategy might look like.
Our most ambitious fieldtrip of the summer was kayaking. We survived a lost phone, several tipped kayaks, at least one boat going the wrong way.

For many of the scholars, it was their first time kayaking. It was great to have both experienced and new kayakers together on this great Ann Arbor waterway.

“Kayaking was 10/10”

“Kayaking!!! It was super fun, great to get outside and moving, good bonding opportunity.”
Abstract: In this interactive session, we will explore how matrices, more specifically matrix multiplication, encodes the geometry of two-dimensional space. The rotation, scaling, or shifting, of a parallelogram or triangle or circle in the plane can be described by matrix multiplication. Additional geometric transformations that can be given by matrix multiplication include reflection and shearing. As an application, we will discuss the important role matrix multiplication plays in computer graphics. The session will start by viewing matrix-vector multiplication from different perspectives. There will be hand-on activities where we answer questions of the form “Given a geometric transformation, what is the matrix that describes it?” We will also establish the link between matrix-matrix multiplication and the composition of geometric transformations. This will allow complex transformations to be described by simpler ones.”
LINKED RESOURCES

MACSS WEBSITE

COURSE MATERIALS

SPEAKER ABSTRACTS
stuff after this is stored templates. Any of them can be used as needed
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CONCLUSION

With the myriad of metrics social media marketers have access to, it’s tempting to drown your audience in numbers. While figures aren’t bad per se, you do have to make sure that these are relevant to the role of those receiving the report. Strive to tell the story behind the numbers by including learnings or insights.

WHAT WE CAN DO BETTER

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OUR GOALS FOR Q2

- With the myriad of metrics social media marketers have access to, it’s tempting to drown your audience in numbers.
- While figures aren’t bad per se, you do have to make sure that these are relevant to the role of those receiving the report.
- Strive to tell the story behind the numbers by including learnings or insights.
- This is where social media reports come in. By tinkering with some data points here and there, social media marketers can tell middle managers Top-level executives how their brands are perceived by their customers. More than just the numbers, digital marketers must also create a concise yet effective social media report that is meaningful for all stakeholders involved.

MCDOWELL DIGITAL MEDIA’S SOCIAL MEDIA TEAM

Now that you know your audience and metrics, you can start creating your report. Kick things off by presenting the big picture. Give a snapshot which summarizes how you are doing across all social media platforms. Here, you can do a health check and assess how well these platforms are doing for the reporting period.

Remember that you don't have to jam all metrics in one page. Make it easy for your audience by selecting just the top three or four important metrics. Then give a few takeaways, which lets you transition smoothly to the other parts of your report.
With the ubiquity of smartphones nowadays, we cannot deny the huge impact of social media in driving consumer behavior. That’s why brands both big and small tap digital platforms in a bid to capture market share.

"Pinterest and Instagram are great social media sites to cater to the younger or millennial market, which likes to be visually stimulated."
"What good are likes if they don't contribute to our business’ bottom line? Measuring our ROI allows us to know if our campaign is effective or not."

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Before even typing your report, first take the time to consider who the report is for. One good rule of thumb to remember is that the higher up the stakeholder is in the organizational ladder, the more succinct the report needs to be.
"Our most viral post received 3k likes and 300 comments. It was also shared 200 times in Facebook."

After presenting your social media overview, you're ready to show your goals and key initiatives. Start by identifying the objectives that the team has set for the reporting period, then relate these to bigger business objectives. If the team has been embarking on key initiatives, remember to keep it simple and zero in on your main goals. For context, present data in easy-to-follow charts, which present the progress you have done month to month. Doing so gives you the opportunity to show how your social media program has been improving over time, as well.