

# Andrew Cheung

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## Education

**Stony Brook University** | M.S. in Applied Mathematics and Statistics 2022 - 2024  
Advanced Graduate Certificate in Data and Computational Science  
3.8 GPA

**Cornell University** | B.S. in Biological Engineering 2015 - 2019  
3.8 GPA

## Skills

**Languages:** Python, MATLAB, JavaScript, R, C/C++, M, SQL

**Front-End & Back-End:** HTML, CSS, MongoDB, React.js, Express.js, Node.js, Git, REST API

## Work Experience

**Epic Systems** | Madison, WI July 2024 - Present  
Technical Solutions Engineer

- Resolve software issues by developing custom scripts in M to query the source code, utilizing internal debugging tools, and implementing effective workarounds and code fixes
- Drive improvements in end-user experience by advocating for, designing, and developing system enhancements that increase usability and streamline workflows for clients
- Showcase new features that align with organization goals and drive adoption across teams and departments
- Collaborate with cross-functional teams to communicate technical challenges, prioritize tasks, and deliver timely resolutions

**Stony Brook University** | Stony Brook, NY Aug. 2022 - May 2024  
Teaching Assistant

- Computing and Programming Fundamentals – Taught 50+ students programming principles using Python and MATLAB
- Statistical Learning – Led 80+ students in data engineering and application of machine learning models using R

**Rockefeller University** | New York City, NY Aug. 2019 - Aug. 2022  
Research Assistant – PI: Charles Rice, PhD

- Recoded Powassan virus genome using computational algorithms to enhance viral susceptibility to the immune response
- Evaluated the safety and efficacy of vaccine candidates in a mouse model and modeled viral kinetics in vivo and in vitro

## Projects

**Moments** | [Github](#)

- Developed a social network website leveraging JavaScript with React.js for the front-end, Node.js with Express.js for the back-end, and MongoDB Atlas for secure storage of user profiles and post data
- Enabled users to create personalized profiles with account registration and engage with content from other users, including the ability to post, view, and like content

**Mental Health ChatBot** | [Github](#)

- Fine-tuned three separate Llama 2 models on data from online counseling platforms, synthetic mental health conversations, and Reddit communities to enhance response quality as a mental health assistant
- Evaluated the quality of responses from the fine-tuned and vanilla models using BLEU score on unseen professional responses
- Developed a web scraper to collect and preprocess mental health-related text data from Reddit communities

**Bentley-Ottmann Sweep** | [Github](#)

- Implemented an algorithm to analyze user-drawn line segments and determine whether they form a face or a forest of trees
- Designed a self-balancing tree data structure to store vertices for optimal performance in detecting intersections

## Publications

**Cheung A...**MacDonald, M.R., Hoffmann, H.H. (2023). Characterization of live-attenuated Powassan virus vaccine candidates identifies an efficacious prime-boost strategy for mitigating Powassan virus disease in a murine model. *Vaccines* 11(3), 612.

Rosain J...**Cheung A...**et al. (2023). Human IRF1 governs macrophagic IFN- $\gamma$  immunity to mycobacteria. *Cell* 186(3), 621-645.