Andrew Cheung

(+1) 718-668-5792 • amc2697@gmail.com • Personal Website • Github: acheung-1 • Linkedin: andrewcheungny

Education

Stony Brook University | M.S. in Applied Mathematics and Statistics — 3.8 GPA   *2022 - 2024*
Coursework: Analysis of Algorithms, Computational Biology, Computational Geometry, Natural Language Processing, Big Data Systems, Algorithms and Networks, Principles of Parallel Computing, Statistical Learning

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

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*
Rotation Student
- Modeled biological molecules at the atomic level using Molecular Dynamics, Monte Carlo simulations, and Docking (DOCK)
- Applied predictive modeling to identify early-stage cancer cells using protein/gene expression and spatial positioning data

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
- Built 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
- Developed user account registration features, allowing personalized profile creation and enabling interaction with content through posting, viewing, and liking.

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, HH. (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-γ immunity to mycobacteria. *Cell* 186(3), 621-645.