

Andrew Cheung

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EDUCATION

Stony Brook University	2022 - 2024
M.S. in Applied Mathematics and Statistics	3.8 GPA
Relevant 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	2015 - 2019
B.S. in Biological Engineering	3.8 GPA

TECHNICAL SKILLS

Languages: Python, C++, C, JavaScript, TypeScript, MATLAB, M, C#, SQL, R, HTML, CSS
Frameworks: Flask, React.js, Express.js
Tools: Git, VS Code, REST API, MongoDB, Docker

EXPERIENCE

Epic Systems	July 2024 – Present
Technical Solutions Engineer	Madison, WI
<ul style="list-style-type: none">Develop M scripts, troubleshoot software, and implement code fixes to enhance system reliability and user experienceBoost feature adoption by analyzing system usage trends, increasing engagement and utility by 350%Lead teams of 10+ analysts to define strategic objectives and drive initiatives impacting over one million users	
Stony Brook University	August 2022 – May 2024
Research Assistant	Stony Brook, NY
<ul style="list-style-type: none">Simulated protein folding and analyzed molecular configurations of drug candidates using Molecular DynamicsPerformed computational analysis on single-cell RNA-seq data to classify cell subpopulations	
Rockefeller University	August 2019 – August 2022
Research Assistant	New York, NY
<ul style="list-style-type: none">Engineered the Powassan virus genome using computational algorithms to increase susceptibility to immune responseEvaluated the safety and efficacy of vaccine candidates in a mouse model and modeled viral kinetics	

PROJECTS

League of Legends Draft Prediction <i>Python, TensorFlow, Flask</i>	Github
<ul style="list-style-type: none">Developed a transformer model trained on 45,000+ matches using Riot's API to generate winning team compositionsDesigned a binary classification model to predict match outcomes based on champion team compositions	
Mental Health ChatBot <i>Python, TensorFlow</i>	Github
<ul style="list-style-type: none">Fine-tuned three Llama 2 models on 1000+ conversations sourced from online counseling platforms, synthetic mental health conversations, and Reddit communities to improve response generation for mental health supportEvaluated fine-tuned and baseline model responses using BLEU score against unseen professional counseling dataDeveloped a web scraper to collect and preprocess mental health-related text from Reddit communities	
Moments <i>JavaScript, React, Express.js, Node.js, MongoDB</i>	Github
<ul style="list-style-type: none">Built a social networking platform supporting user registration, customizable profiles, and real-time social interaction	
Polygonal Face Detection and Graph Analysis <i>Python</i>	Github
<ul style="list-style-type: none">Analyzed user-drawn line segments to classify geometric structures as closed polygonal faces or disjoint acyclic graphsImplemented a self-balancing tree data structure to maintain and query line segments for intersection detection	

PUBLICATIONS

- Cheung A...**Rice, C.M., 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.