GAUTOM **DAS**

CONTACT

Email: gdas@umd.edu
Website: gautomdas.com
GitHub: gautomdas

COMPUTER SKILLS

LANGUAGES/FRAMEWORKS

Python – PyTorch, Pandas, SciKit-Learn, Anaconda;
JavaScript – React.js Node.js, D3.js, p5.js;
C/C++, Rust, Go, Julia, Java, HTML, CSS, R, Git
MATLAB, Bash, Latex, Docker, Kubernetes, Unix

ORGANIZATIONS

Sheryl Inc. - C-Corp

Worked with a group of individuals to design a proprietary functional encryption algorithm to securely let researchers operate on data without ever seeing the data, thereby bypassing common regulations.

blair3sat - 501(c)3 Subsidiary

Led a student-run cube satellite team dedicated to building the first-ever generalized ionosonde receiver to generate a 3D model of the ionosphere.

AWARDS

2019 | VTHacks – Best UX/UI
2019 | PoweredByTF 2.0 Challenge – Community Winner
2019 | International Mathematical Modelling Competition – Finalist
2019 | USACO – Gold
2019 | HackNYU – 3rd Place Medical Route
2019 | HackPenn – Best Overall
2018 | HackBI II – Grand Prize

EDUCATION

UNIVERSITY OF MARYLAND, COLLEGE PARK | 2020-PRESENT

Computer Science and Math Double Major, Physics Minor

Classes: Object Orientated Programming I & II, Discrete Mathematics, Differential Equations, Linear Algebra, Calculus III

PROFESSIONAL EXPERIENCE

NAVAL MEDICAL RESEARCH CENTER (NMRC) | 2019

Worked on analyzing data from blast exposures to improve diagnoses and assessment of traumatic brain injuries. Gained experience in signal processing, image processing (openCV), high performance computing (Fortran), and data analysis (R).

UNIVERSITY OF MARYLAND MEDICAL CENTER (UMMC) | 2018

I used of 3D convolutional neural networks (TensorFlow) to attempt to detect Parkinson's disease detection with MRI scans and wrote a method for generate 3D heatmaps to identify regions of interest.

RESEARCH

2020 | Micro-Options: A Dynamic Pricing Model for Trading Zero-Charge Short Time Interval Stock Martingales

Developed a financial invention that allows buyers to buy and sell a limitless number of times within a short interval of time. A variation of the black-scholes model that uses a monte carlo simulation based on prior volatility to prescribe a distribution of capital gains to allow for effective post-trading fees.

2020 | Fall of the Champions: An Economic Analysis of Delaying the 2020 Olympic Games on Japan's Economy

Using the Bank of Japan's public data we studied the flow of loans, expenditure records, business sentiment, and past fiscal consequences, to attempt to qualitatively and quantitatively describe the coming effects of delaying the 2020 olympic games.

2019 | Structural Mutations in Rational Drug Design for Biosimilar Generation Using Reinforcement Learning

Studied protein docking and attempted to use reinforcement learning to take a known compound and mutate it into a working biosimilar. If computational costs of docking were reduced, cost of biosimilar developement could potentially be reduced.

2019 | NMRC | Assessing Endothelial Glycocalyx Damage Under Blast Exposure with Automated Image Processing

2019 | NMRC | The Effect of Varying Levels of Blast Exposure on Cerebral Vascular Reactivity Over Time in a Rat Model

2017-2019 | blair3sat | Space-based Ionosonde Receiver and Visible Limb-viewing Airglow Sensor (SIRVLAS): A CubeSat Instrument Suite for Enhanced Ionospheric Charge Density Measurements

SOFTWARE APPLICATIONS

Eye Coach | HackPenn

Wrote an app using Swift and Apple's ARKit to track eye contact and provide real time feedback.

Nurse Shift | HackNYU

Created an online platform to allow for nurses to seemlessly transfer data between one another (MongoDB, ReactJS).

Model Bench | HackBI

A centralized platform that allowed researchers to test and compare their models against one another give in a controlled environment (Electron.js, TensorFlow, Go).