

Sauman Das

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EDUCATION

Thomas Jefferson High School for Science and Technology

Class of 2023: 12th grade (GPA: 4.575 Weighted, 4.00 Unweighted)

Relevant Coursework: Multivariable Calculus, Matrix Algebra, Artificial Intelligence, Machine Learning, Computer Vision, AP Computer Science A+ Data Structures, AP Macroeconomics, AP Microeconomics, Electrodynamics, Quantum Information and Optics Lab, AP Physics C: Mechanics, AP Physics C: Electricity and Magnetism, AP Biology, AP Government, AP English Language and Composition, AP US History

PROFESSIONAL EXPERIENCES

Naval Research Laboratory | Research Intern | Washington D.C. Jun 2022 – Aug 2022

- Worked with Dr. Leslie Smith at the Navy Center for Applied Research in Artificial Intelligence (NCARAI)
- Developed an image-to-image translation model for generating acoustic data
- Work Schedule: 8 hours per day/8 weeks

George Mason University | Research Intern | Fairfax, VA Mar 2022 – Present

- Worked on Theoretical CS + Machine Learning Project on Hierarchical Clustering
- Experimentally prove theoretical results on hierarchical clustering with triplet constraints
- Weekly Meetings at the GMU Nguyen Engineering Building
- Paper accepted into Main Track of AAAI'23

UC Irvine | Research Intern Mar 2022 – Dec 2022

- Presented my preliminary Glioblastoma research to Center for AI in Diagnostic Medicine (CAIDM) lab in March → Invited as a student intern
- Worked with Dr. Peter Chang and team on modelling MICCAI-RSNA dataset
- Published paper at 34th IEEE Conference on Tools in Artificial Intelligence
- Research submitted to Regeneron Science Talent Search

George Mason University | Research Intern Jun 2021 – Aug 2021

- Worked with Dr. Fatah Kashanchi in the School of Systems Biology
- Studied the Impact of SARS-CoV-2 on the Central Nervous System
- Presented work at Aspiring Scientists Summer Internship Program (ASSIP) Poster Conference
- Abstract published in Journal of Student-Scientists' Research

ACTIVITIES

TJ Machine Learning | Captain (2022-23), Teaching Coordinator (2021-22) | TJHSST Aug 2019 – Present

- Give lectures and plan activities including competitions for beginner and advanced groups
- Attend weekly lectures and give lectures on Machine Learning theory
- Currently organizing a Student Research Conference to be hosted at TJ in February 2023
- Contest Participant
- Skills acquired: leadership, machine learning, deep learning, computer vision, research

Intermediate Computer Team | Captain (2021-22) | TJHSST Aug 2019 – Jun 2022

- Create new problems for contests and write lectures for students as a captain
- Represented school in programming competitions (American Computer Science League, Montgomery Blair Informatics Tournament)
- Skills acquired: programming, algorithm development, leadership & collaboration

Varsity Math Team | Contest Representative | TJHSST Aug 2019 – Present

- Represented School in American Regional Math League (ARML), MMATHS (Yale)
- Volunteered at 2020 MATHCOUNTS Chapter Competition - proctored students
- Coached middle school students in 2021 and 2022 TJ Intermediate Math Open (TJIMO)
- Give lectures on competitive math concepts

- Skills acquired: problem-solving, teamwork, organization

StartOnAI | Lead Workshop Presenter, Content Creator | Non-Profit Organization

Aug 2020 – Aug 2022

- Presented at [Global Nagpur Summit](#) 2020 and 2021
- Create Deep Learning Tutorials
- Skills acquired: machine learning, collaboration, teaching

PUBLICATIONS

Automated Bias Reduction in Deep Learning Based Melanoma Diagnosis using a Semi-Supervised Algorithm **Sauman Das**

2021 IEEE International Conference on Bioinformatics and Biomedicine (BIBM)

Optimizing prediction of MGMT promoter methylation from MRI scans using adversarial learning **Sauman Das**

2022 IEEE International Conference on Tools with Artificial Intelligence (ICTAI)

Tree Learning: Optimal Algorithms and Sample Complexity

Dmitrii Avdiukhin, Grigory Yaroslavstev, Danny Vainstein, Orr Fischer, **Sauman Das**, Faraz Mirza

2023 AAAI Conference on Artificial Intelligence

Cross-Dataset Evaluation of Multimodal Neural Networks for Glaucoma Diagnosis

Sauman Das, Arnav Jain, Audhav Durai, Sameer Gabbita, Aditya Vasantharao, Vishal Kotha

2022 IEEE International Conference on Data Science and Advanced Analytics

Sentiment Sensitive Debiasing: A Learning-Based Approach to Remove Ethnic Stereotypes in Word Embeddings

Audhav Durai, Aditya Vasantharao, **Sauman Das**

International Journal of Computational Linguistics

PROJECTS

Ichos: A Web Application for Early Disease Screening Using Speech and Breath Recordings

Congressional App Challenge Winner, Conrad Challenge Semifinalist, Provisional Patent Acquired, Panelist at 2022 USPTO “Apply Yourself” Event

PET: Physical Education Tool

Best Educational Hack @ UVA HooHacks

NEWS ARTICLES

Fairfax County Times: [“TJHSST students receive Congressional App Award”](#)

Times of India: [“AI business shaping world into new tomorrow”](#)

HONORS/AWARDS

- 2021 International Science and Engineering Fair Finalist, Virginia State Science and Engineering Fair Best of Category Award + Grand Prize Winner
- Invited Speaker @ 2022 JHU Global Health Leader’s Conference Student Speaker Series
- 5 Peer-Reviewed Publications
- 3x AIME Qualifier (Highest AIME Score: 8)
- 2021 Congressional App Challenge First Place VA-09 District, Acquired Provisional Patent for Project
- USA Computing Olympiad (USACO) – Gold Division
- Best Educational Hack @ UVA HooHacks
- 2021, 2022 Conrad Spirit of Innovation Challenge – Semifinalist and Conrad Innovator
- National Merit Semifinalist (PSAT: 1490/1520)
- UVA HSPC 3rd Place
- Purple Comet Math Competition - 2nd place in Virginia
- Stanford ProCo (Programming Competition) – 6th Place Novice Division
- 2020 American Computer Science League Finals (national tournament) – 2nd place individual (best in school)