Clark Saben

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EDUCATION AND HONORS

Chantilly Highschool June 2020
- GPA: 3.98
- Track Captain

University of Mary Washington Fredericksburg, VA
Pursuing Bachelors in Science with Physics and Math Double Major May 2024
- Cumulative GPA: 3.88/4.0, President's List
- Presidential Award

2020, 2021

RESEARCH EXPERIENCE

Biomedical Imaging Research Fredericksburg, VA
Undergraduate Researcher, Co-Author Jan 2021 – June 2021
- Utilized Rhino 3D software to generate NERB polygon meshes
- Publication: Makkia R, Brindle S, Saben C, Brain Imaging for Autism Diagnosis, ref: https://physics.aps.org/articles/v14/44 Mar 22, 2021

[Active Semester] Applied Physical Systems Research Fredericksburg, VA
Undergraduate Researcher January 2022 – Current 2022
- Modeling wind dynamics computationally using fluid dynamics
- Derivative research into mapping neural activity to better understand predicted neuron connectivity

Undergraduate Biology Research Fredericksburg, VA
Undergraduate Researcher August 2020 – January 2021
- Developed and iterated upon prior procedures for imaging the ultrastructure of Chritidia
- Provided group instruction to fellow researchers on equipment usage

SKILLS

- **Programming Languages:** Python, Basics of Solidity, Basics of C, HTML, CSS
- **Machine Learning:** Python (eg. scikit-learn, numpy, pandas, PyDicom, Torch)
- **Data Science & Miscellaneous:** Data science pipeline (preprocessing, visualization, modeling), Experimental design, APIs, Excel, Git, Docker, operation of Hitachi S-3400N SEM (electron microscope)

PROJECTS AND LEADERSHIP

2nd Place UMW Hackathon Placement
24hr school-wide coding competition March 2021 – March 2021
- Developed a machine learning model for classification of eagles (school mascot) that achieved 91% accuracy
- Developed multi classification model for tumor, necrosis, and control brain images (nominal accuracy)
- Utilized Python to web scrape images for classification tasks, stored test data appropriately

[Ongoing] Chain Link Sponsored Hackathon Project: Radiology Application (RadApp)
Blockchain and Machine Learning Development October 2021 – November 2021
- Developed white paper of RadApp v.0 (GitHub repo)
- Collected and Visualized Cancer Imaging Archive Glioma Dataset
- Developed original concept & Conducted outreach for team recruiting
- Organized a team of 5 members; created slack, discord, team meetings
- Built and Deployed model to docker for inference

Top 35% placement in Kaggle RSNA Brain Tumor Classification Task
Kaggle Expert: Profile August 2021 - October 2021
- Developed preprocessing pipeline for dicom files utilizing Pydicom and native python libraries
- Visualized animations of segmentation series using Matplotlib
- Trained on a 2dConvolutional Neural Network and performed bagging to develop best local model (0.78 a.u.c)
- Organized Discord Server for team member communications

Eagle Scout Centreville, VA
Patrol Leader Jan 2015 - Aug 2020
- Led patrol of 7+ individuals in camping activities