AARON MARKER

https://aaronmarker.github.io/ ● https://github.com/aaronmarker ● aaronmarker@comcast.net

EDUCATION

Vanderbilt University **August 2025-Present**
Visiting Scholar

Stony Brook University (SUNY) **September 2023 - Present**
Doctor of Philosophy in Computer Science
Subject: Computer Science
Cumulative GPA: 3.85 / 4.00
Advisor: Andrew Schwartz, Ph.D.

Randolph-Macon College **September 2019 - May 2023**
Bachelors of Science in Computer Science and Cybersecurity
Minors: Mathematics and Ethics
Cumulative GPA: 4.04 / 4.00
Senior Capstone Thesis: *Evaluating the Quality of GAN Generated Art*
Advisor: John McManus, Ph.D.

PROFESSIONAL EXPERIENCE

Research Assistant, Human Language Analysis Beings (HLAB) **May 2024 – Present**
Computer Science Department Stony Brook University

- Developed fairness pipeline software to evaluate error disparity on machine learning models in python for AIM-AHEAD grant
- Conducted research comparing models' accuracy on different demographic ratios in opioid use disorder clinical trials

Junior System Administrator, (HLAB) **May 2024 – Present**
Computer Science Department Stony Brook University

- Managed linux, databases, and GPU usage on large research team's servers

Founder, Executive Producer **2022-Present**
Cinder Studios, LLC, Mechanicsville, VA

- Developing an online multiplayer 2D video game using C#
- Supervised and taught 7 undergraduate and high school interns about software/game development

Software Developer **2018-2023**
Rare Roots, LLC, Mechanicsville, VA

- Created an order management program using C# and SQL
- Takes in order data from Shopify and allows for the convenient management of orders for shipment

Software Developer **2015-2023**
Sandy's Plants, Inc., Mechanicsville, VA

- Created and maintain an inventory management program using C# and SQL
- Allows plants' location and information to be easily accessed and managed

Software Development Intern **Winter 2022**
Yobo, Inc., Ashland, VA

- Worked with teammates using GitHub to build clean and well-managed code
- Integrated client-side features with server-side code using JavaScript to allow syncing of player states

Software Development Intern **Summer 2020**
Computer Resource Company, Richmond, VA

- Learned about software built in C# and SQL for stock trading
- Helped automate testing of the software

MANUSCRIPTS

Marker, A., Giorgi, S., Ganesan, A. V., Varadarajan, V., Brandt, L., Odom, G. J., Schwartx, H. A. (under review). Characterizing Sociodemographic Error Disparities in Large-scale Language-based Health Predictions. *Association for Computational Linguistics Rolling Review (ARR).*

Odom, G. J., Brandt, L., **Marker, A.**, Giorgi, S., Jainarain, G., Schwartz, H. A., Au, L., Castro, C. (under review). From Clinical Trials to Real-World Impact: Introducing a Computational Framework to Detect Endpoint Bias in Opioid Use Disorder Research. *Drug and Alcohol Review*

RESEARCH EXPERIENCE

Human Centered Natural Language Processing Research **May 2024 – Present**

Human Language Analysis Beings (HLAB) Research Assistant Stony Brook University
Principle Investigator: Andrew Schwartz, Ph.D.

- Compared factor inclusion methods for their effect on error disparities between different county level demographic natural language models
- Developed psychologically motivated recommendation systems to target more latent concepts such as fundamental well-being as opposed to engagement (ongoing)

Studying Twitter Engagement with Natural Language Processing **Summer 2022**

Schapiro Undergraduate Research Fellow Randolph-Macon College
Advisor: John McManus, Ph.D.

- Researched engagement acquired by generative language model bots on social media using the Twitter API and GPT2 model

Developing an Evaluation Metric for AI Generated Art **Spring 2022**

Capstone Project Student Researcher Randolph-Macon College
Advisor: John McManus, Ph.D.

- Developed evaluation metric for the quality of AI generated art using a survey
- Accepted to Consortium for Computing Sciences in Colleges where it won Best Student Paper

Comparing Architectures for Style and Content Disentangled Art Generation **Fall 2021**

Independent Study Student Researcher Randolph-Macon College
Advisor: John McManus, Ph.D.

- Compared architectures such as StyleGAN and SC-GAN for strength at disentangling style from content in painting generation
- Accepted to the National Conference for Undergraduate Research for presentation of research

Generative Adversarial Networks for Image Style Transfer **Summer 2021**

Schapiro Undergraduate Research Fellow Randolph-Macon College
Advisor: John McManus, Ph.D.

- Evaluated the use of conditional generative adversarial networks for painting generation as well as understanding of distinction of art styles

TEACHING EXPERIENCE

Teaching Assistant **2023-2024**
Computer Science Department, State University of New York at Stony Brook
- Held office hours to answer student questions
- Graded assignments

Tutor **2020-2023**
Higgins Academic Center, Randolph-Macon College
- Provided tutoring to students for Calculus I & II and Computer Science classes at all undergraduate levels

ADMINISTRATIVE EXPERIENCE

ACM Chapter President **2021-2022**
Randolph-Macon College Association of Computing Machinery Chapter
- Set up fundraisers with the community
- Increased membership with frequent meetings
- Organized practices for the International Collegiate Programming Competition and greatly improved all chapter teams' final standings over the previous year

ODK Chapter Vice President **2022 –2023**
Omicron Delta Kappa National Leadership Honor Society

PRESENTATIONS

Marker, A., Odom, G. J., Giorgi, S., Jainarain, G., Schwartz, H. A., Au, L., Castro, C., Brandt, L. From Clinical Trials to Real-World Impact: Introducing a Computational Framework to Detect Endpoint Bias in Opioid Use Disorder Research. *AIM-AHEAD Annual Meeting; 2025*

Odom, G. J., **Marker, A.**, Jainarain, G., Giorgi, S., Castro, C., Au, Schwartz, H. A., L., Brandt, L. The 'Detecting Algorithmic Bias' (DAB) Pipeline. *The College on Problems of Drug Dependence; 2025*

Marker A. Applying a Content and Style Disentangled GAN Architecture to Art Generation presented at the *National Conference on Undergraduate Research*; 2022

Marker A. Evaluating the Quality of Art Generated by CLIP+VQGAN presented at the *Consortium for Computing Sciences in Colleges*; 2022

CERTIFICATION AND TRAINING

CITI Program: Artificial Intelligence (AI) and Human Subject Protections 2025

CITI Program: Conflict of Interest 2025

SKILLS

Languages: Python, MySQL, Java, C#, and C
Software: Linux Shell, ssh, Visual Studio Code, Jupyter Notebook, Microsoft Excel, Slack

HONORS AND ACHIEVEMENTS

Phi Beta Kappa Honor Society 2023

Best Student Paper Award at the Consortium for Computing Sciences in Colleges 2022

Alpha Lambda Delta Honor Society 2022

Omicron Delta Kappa National Leadership Honor Society 2021
Randolph-Macon College Dean's List 2019 - 2023

Randolph-Macon College Honors Program 2019 - 2023

Randolph-Macon College Presidential Merit Scholarship 2019 - 2023

Colonial Agricultural Educational Foundation Scholarship 2019