Andrew Cornelio

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I am a highly motivated software engineer with broad experience working with large data sets to extract valuable information. I am curious about a wide range of subjects and have worked in multi-disciplinary teams of engineers, mathematicians, statisticians, and domain experts. My goal is to explore and apply new technologies to contribute meaningfully to my team's mission.

Education

Johns Hopkins University, Whiting School of Engineering **Aug 2018 – Dec 2021**
Baltimore, MD
Bachelor of Science - Major in Applied Math and Statistics, Minor in Computer Science
GPA: 3.67

Professional Experience

Research Specialist **Apr 2022 – Present**
Johns Hopkins University, Baltimore, MD

- Developed deep learning and classical computer vision software to segment, denoise, align, detect artifacts, and improve resolution of large three-dimensional medical images obtained from Optical Coherence Tomography devices to improve the quality of diagnosis for retinal diseases
- Collaborated with multidisciplinary team of clinicians, electrical engineers, statisticians, and computer scientists in multiple clinical studies
- Containerized and optimized data analysis pipelines using Docker, enhancing reproducibility and streamlining scientific workflows
- Two abstracts accepted to ARVO 2023 and 2024 and full peer-reviewed paper published in Biomedical Optics Express 2024

Machine Learning Intern **Aug 2020 – Sept 2020**
Skimo TV, Sunnyvale, CA (Remote)

- Built a pre-processing pipeline to collect and clean data from YouTube videos of professional meetings with the purpose of generating meeting minutes from important keywords in human speech
- Utilized Python, Spacey, and Hugging Face to identify and model speech components and speech sentiment from the clean data
- Presented pre-processing pipeline and model results of key findings to CEO, senior stakeholders, and other team members

Operations Research Project Team Member **Aug 2018 – Jan 2020**

Johns Hopkins University, Baltimore, MD

- Created game scheduling software for Minor Baseball leagues (Carolina League and Pioneer League) using Matlab, Gurobi, and Operations Research theory under supervision of a Johns Hopkins Professor Anton Dahbura
- Presented findings in poster format at a school-wide conference

Teaching Assistant, Intermediate Programing **Jan 2020 – May 2020**

Johns Hopkins University, Baltimore, MD

- Supported a professor in the delivery of large school-wide course (Intermediate Programing) by holding office hours and grading assignments
- Taught students how to use syntax and data structures in C and C++ and debug their code using Git version control and GNU debugger (GDB)

Skills and Interests

- Languages: Python, Javascript, Java, C++, C, MATLAB, Bash
- Data Science/Artificial Intelligence: SciPy, NumPy, Matplotlib, PyTorch, Conda, Scikit-Learn, Scikit-Image
- Data: MySQL
- Computer Environments: Linux, Windows, OSX, Docker
- Developer Tools: Git, Github, Gitlab, Bitbucket, VSCode, Vim
- Cloud Environments: Google Cloud, Azure
- Web: HTML, CSS, Flask, Node

Papers and Abstracts

2023:

Automated Pipeline for OCTA Image Denoising (ARVO)

2024:

Volume Alignment and Secondary Analysis of OCT and OCTA (ARVO)

Rigid alignment method for secondary analyses of optical coherence tomography volumes (Biomedical Optics Express)