David Oniani

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Visit www.davidoniani.com for my publications, software, and more!

Education

- **Luther College** — Decorah, IA
  B.A. Computer Science, Mathematics (magna cum laude) — *Aug. 2017 – May. 2021*

Technical Skills

- Languages: Python, Modern C++, Go, Rust, Shell script, Haskell, Lua, SQL, Javascript, HTML, CSS.
- Tools and Libraries: Linux, macOS, Neovim, Git, Docker, PyTorch, TensorFlow, matplotlib, numpy, pandas, scikit-learn, Flask.
- Theory: Applied Statistics, Deep Learning, Information Theory, Multivariable Calculus, Real Analysis, Topology.
- Other Skills: LaTeX, Markdown, Technical Writing.

Work Experience

- **University of Pittsburgh** — Pittsburgh, PA
  Machine Learning Research Scientist — *Feb. 2022 – Present*
  - First-authored papers submitted to leading AI, NLP, and engineering conferences and journals.
  - Researching few-shot and prompt-based learning strategies for efficient text classification.
  - Lead architect and engineer of OMOP CDM-compliant research data warehouse - ReDWINE.
  - Giving lectures, presenting my work, and supporting various projects within lab.
- **DawnLight** (Sequoia Capital Backed Ambient Intelligence and Edge Computing Startup) — Palo Alto, CA
  Research Engineer — *Apr. 2021 – Jan. 2022*
  - Developed and maintained AI sensing inference runtime for audio and radar (C++ codebase).
  - Architected and trained highly performant CNN-based AI model for human activity detection.
  - Implemented APIs and data engineering pipelines for interacting with data platforms.
  - Together with Principal Scientist, wrote C++ library of signal processing algorithms (libdsp).
- **Mayo Clinic** — Rochester, MN
  Artificial Intelligence Researcher — *Feb. 2020 – Sep. 2020*
  - First-authored papers accepted at major AI and biomedical informatics conferences and journals.
  - Built chatbot as extension of GPT-2 model by applying BERT, BioBERT, USE, and tf-idf.
  - Utilized node2vec for generating COVID-19 network embeddings and built co-occurrence network.
  - Worked directly under Dr. Feichen Shen and Dr. Yanshan Wang in division of Dr. Hongfang Liu.

Research Experience

- **Luther College** — Decorah, IA
  Research in Programming Languages and Type Theory with Dr. Alan K. Zaring — *Fall 2019*
  - Extended CCL language and wrote type-checking rules.
  - Introduced the notion of container types into the language.
  - Designed relational operators for container types.

  Research in Artificial Intelligence and Authorship Attribution with Professor Richard K. Merritt — *Summer 2019*
  - Trained convolutional neural networks for image recognition using PyTorch.
  - Wrote Python programs for PDF image and text extraction and data cleanup.
  - Performed extensive set of both statistical and textual analyses using state-of-the-art algorithms.

  Research in Unit Testing with Dr. Roman Yasinovskyy — *Summer 2018*
  - Automated feedback generation for C++ programming course.
  - Redesigned and significantly improved SQL and relational algebra solution checker.
  - Designed testable practice problems for algorithms and data structures course.

Select Publications

- Constructing Co-occurrence Network Embeddings to Assist Association Extraction for COVID-19 and Other Coronavirus Infectious Diseases
- A Qualitative Evaluation of Language Models on Automatic Question-Answering for COVID-19
- Social and Behavioral Determinants of Health in the Era of Artificial Intelligence with Electronic Health Records: A Scoping Review
- Setting Up Python Development Environment for Use in a Small Classroom

Honors and Awards

- Multiple Competitive Scholarships, Luther College (2017 – 2020)
- Recipient of 2 Luther College Dean's Office Summer Research Awards, Luther College (2018, 2019)
- Dean's List Recipient, Luther College (All Semesters)
- Selected Start-up (UnleashAR), TOP 200, Wolves Summit (Largest Startup Conference in EU) (2017).
- Gold Medal for Academic Excellence, Ministry of Education and Science of Georgia (2016)
- Multiple-time Finalist, National Mathematics Olympiad of Georgia (2011 – 2016)
- 7^{th} Place (TOP 10) National Mathematics Olympiad of Georgia (2014)
- IMO & IPhO Nominee, Ministry of Education and Science of Georgia, (2014)

Activities and Memberships

- Member, Pi Mu Epsilon (Math Honor Society), 2020 – Present
- Member, Association for Computing Machinery (ACM), 2022 – Present

Natural Language Proficiency

- English, Native
- Georgian, Native
- Russian, Native
- Mingrelian, Native
- Japanese, Elementary

Volunteer Experience

- Transparency International Georgia, Georgian Parliamentary Elections Observation Mission, 2016

Other Experience

Luther College – Department of Computer Science Decorah, IA
Teaching Assistant *Aug. 2018 – Jan. 2021*

- Computational Models (CS 260) with Dr. Alan K. Zaring (Fall 2020).
- Object-Oriented Programming With Java (CS 252) with Dr. Shafqat A. Shad (Fall 2019).
- Introduction to Computer Science (CS 150) with Dr. Alan K. Zaring (Fall 2018).
- Held help hours and assisted students with homework assignments.
- Attended all classes and answered questions during the labs.

Luther College – ITS Workstation Decorah, IA
ITS Workstation Support Engineer *Jul. 2019 – Aug. 2019*

- Was responsible for installing and updating operating systems across campus.
- Troubleshot technical issues of computer systems.
- Set up new hardware to be used by college students.
- Installed software to be used by faculty for teaching purposes.

Luther College, ITS – Software Development Decorah, IA
Web Programmer *Jun. 2018 – Dec. 2018*

- Contributed to brand new Norse Hub web system which has successfully replaced my.luther.edu.
- Communicated with team, wrote reports, and attended weekly SCRUM meetings.
- Conducted performance and load testing using JMeter and presented results.
- Created data visualization tool utilizing JavaScript DOM.
- Migrated from the Microsoft to Linux server and refactored Python code.