

David Oniani

Curriculum Vitae

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Education

2017 – 2021
Aug May **BA, Computer Science, Mathematics, *Luther College***, Decorah, IA
○ GPA: 3.780/4.0, Computer Science GPA: 3.930/4.0, Mathematics GPA: 3.783/4.0

Research Experience

2023 – Now
Oct **Associate Director, PittNAIL Lab, *University of Pittsburgh***, Pittsburgh, PA
○ Principal Investigator: Prof. Yanshan Wang

2023 – Now
Apr **Research Collaborator, *HealthUnity***, Palo Alto, CA
○ Advisors: Prof. Yanshan Wang, Prof. Ramesh Jain, and Dr. Jia Li

2022 – Now
Feb **Machine Learning Research Scientist, *University of Pittsburgh***, Pittsburgh, PA
○ Principal Investigator: Prof. Yanshan Wang

2020 – 2020
Feb Sept **Research Intern, *Mayo Clinic***, Rochester, MN
○ Mentors: Prof. Feichen Shen and Prof. Yanshan Wang

2018 – 2019
May Sept **Undergraduate Researcher, *Luther College***, Decorah, IA
○ Research in programming languages and type theory with Prof. Alan K. Zaring (Fall 2019)
○ Research in machine learning and persuasion with Prof. Richard K. Merritt (Summer 2019)
○ Research in teaching and unit testing with Prof. Roman Yasinovskyy (Summer 2018)

Industry Experience

2021 – 2022
Jun Jan **Research Engineer, *DawnLight***, Palo Alto, CA
○ Supervisors: Dr. Nathan Liu and Dr. Prakash S. R.

2021 – 2021
Apr May **Machine Learning Intern, *DawnLight***, Palo Alto, CA
○ Supervisor: Dr. Nathan Liu

Teaching

2022 – Now
Feb **Guest Lecturer, *University of Pittsburgh***, Pittsburgh, PA
○ Guest lectures on applied statistics and programming languages (HI 2250)
○ Guest lectures on NLP and its applications in healthcare (HI 2021, HI 2453)

2018 – 2021
Aug Jan **Teaching Assistant, *Luther College***, Decorah, IA
○ TA for CS260 – Computational Models (Fall 2020)
○ TA for CS252 – Object-Oriented Programming With Java (Fall 2019)
○ TA for CS150 – Introduction to Computer Science (Fall 2018)

Service

2023 **Invited Co-Author, *IMIA Yearbook 2023***

Chapter on LLMs for EHRs

2023 **Program Committee Member, *EBAIC 2023***

IEEE ICHI 2023 Workshop

2023 **Reviewer, *Journal of Healthcare Informatics Research***

2022 – Now **Educational Content Creator, YouTube**

2022 **Secondary Reviewer, *LREC 2022***

2022 **Reviewer, *Artificial Intelligence in Medicine (AAIM)***

2022 **Reviewer, *IEEE ICHI 2022***

2022 **Reviewer, *Big Data***

Publications

- [1] **David Oniani**, Jordan Hilsman, Yifan Peng, Ronald K. Poropatich, et al. “Adopting and expanding ethical principles for generative artificial intelligence from military to healthcare”. In: *npj Digital Medicine* (2023). DOI: [10.1038/s41746-023-00965-x](https://doi.org/10.1038/s41746-023-00965-x).
- [2] **David Oniani**, Bambang Parmanto, Andi Saptono, Allyn Bove, et al. “ReDWINE: A Clinical Datamart with Text Analytical Capabilities to Facilitate Rehabilitation Research”. In: *International Journal of Medical Informatics* (2023). DOI: [10.1016/j.ijmedinf.2023.105144](https://doi.org/10.1016/j.ijmedinf.2023.105144).
- [3] **David Oniani**, Premkumar Chandrasekar, Sonish Sivarajkumar, and Yanshan Wang. “Few-Shot Learning for Clinical Natural Language Processing Using Siamese Neural Networks: Algorithm Development and Validation Study”. In: *JMIR AI* (2023). DOI: [10.2196/44293](https://doi.org/10.2196/44293).
- [4] **David Oniani**, Sreekanth Sreekumar, Renuk DeAlmeida, Dinuk DeAlmeida, et al. “Toward Improving Health Literacy in Patient Education Materials with Neural Machine Translation Models”. In: *AMIA Jt Summits Transl Sci Proc*. PMID: [37350905](https://pubmed.ncbi.nlm.nih.gov/37350905/). 2023.
- [5] Anusha Bompelli, Yanshan Wang, Ruyuan Wan, Esha Singh, Yuqi Zhou, Lin Xu, **David Oniani**, Bhavani Singh Agnikula Kshatriya, et al. “Social and Behavioral Determinants of Health in the Era of Artificial Intelligence with Electronic Health Records: A Scoping Review”. In: *Health Data Science* (2021). DOI: [10.34133/2021/9759016](https://doi.org/10.34133/2021/9759016).
- [6] **David Oniani** and Yanshan Wang. “A Qualitative Evaluation of Language Models on Automatic Question-Answering for COVID-19”. In: *Proceedings of the 11th ACM International Conference on Bioinformatics, Computational Biology and Health Informatics (ACM-BCB)*. 2020. DOI: [10.1145/3388440.3412413](https://doi.org/10.1145/3388440.3412413).
- [7] **David Oniani**, Guoqian Jiang, Hongfang Liu, and Feichen Shen. “Constructing co-occurrence network embeddings to assist association extraction for COVID-19 and other coronavirus infectious diseases”. In: *Journal of the American Medical Informatics Association* (2020). DOI: [10.1093/jamia/ocaa117](https://doi.org/10.1093/jamia/ocaa117).
- [8] Roman Yasinovskyy, Karina Hoff, and **David Oniani**. “Setting Up Python Development Environment for Use in a Small Classroom”. In: *Midwest Instruction and Computing Symposium*. 2020. URL: https://www.micsymposium.org/mics_2020_Proceedings/MICS2020_paper_61.pdf.

Manuscripts Under Review

- [9] **David Oniani**, Jordan Hilsman, Hang Dong, Fengyi Gao, et al. *Large Language Models Vote: Prompting for Rare Disease Identification*. Under Review at LREC-COLING 2024. Preprint at <https://arxiv.org/abs/2308.12890>.
- [10] Mahyar Abbasian, Elahe Khatibi, Iman Azimi, **David Oniani**, et al. *Foundation Metrics: Quantifying Effectiveness of Healthcare Conversations powered by Generative AI*. Under Review at npj Digital Medicine. Preprint at <https://arxiv.org/abs/2309.12444>.
- [11] Sonish Sivarajkumar, Haneef Ahamed Mohammad, **David Oniani**, Kirk Roberts, et al. *Clinical Information Retrieval: A scoping review*. Under Review at Journal of Healthcare Informatics Research. Preprint at <https://www.researchsquare.com/article/rs-2748158/v1>.

Manuscripts in Preparation

- [12] **David Oniani** and Yanshan Wang. *In-Context Learning Functions with Varying Number of Minima*. In Preparation for ICML. Preprint at <https://arxiv.org/abs/2311.12538>.
- [13] **David Oniani**, Junmei Wang, Jordan Hilsman, Chengxi Zang, et al. *Topic: Facilitating Drug Discovery Using Large Language Models*. In Preparation for Nature Communications.
- [14] **David Oniani**, Ramesh Jain, Minal Moharir, Jia Li, et al. *Topic: Artificial Intelligence and Precision Nutrition*. In Preparation for Nature Food.

Honors and Awards

- 2023 Green Card Approval for [Exceptional Ability \(NIW\)](#), USCIS
- 2020 Inductee, [Pi Mu Epsilon](#) Honorary National Mathematics Society
- 2017 – 2020 Dean's List Recipient, [Luther College](#)
- 2018 – 2019 Recipient of Two Dean's Office Summer Research Awards, [Luther College](#)
- 2017 – 2021 Founders Scholarship, [Luther College](#)
- 2017 – 2021 Recipient of Multiple Highly Competitive Scholarships, [Luther College](#)
- 2016 Gold Medal for Academic Excellence, [Ministry of Education and Science of Georgia](#)
- 2011 – 2016 Four-Time Finalist (\approx TOP 20 – 30), [National Mathematics Olympiad of Georgia](#)
- 2014 7th Place (TOP 10), [National Mathematics Olympiad of Georgia](#)
- 2014 IMO Candidate for National Team, [Ministry of Education and Science of Georgia](#)
- 2014 IPhO Candidate for National Team, [Ministry of Education and Science of Georgia](#)
- 2014 Winner, Second Stage, [National Mathematics Olympiad of Georgia](#)

Technical Skills

- Languages Python, Rust, Shell Script, C++, SQL, Lua, Haskell, R, Java, JavaScript, \LaTeX
- Tools Linux, Neovim, Git, Docker, Flask, Zola, Google Cloud Platform (GCP)
- Libraries PyTorch, Transformers, NumPy, Matplotlib, pandas, scikit-learn

Natural Languages

- English Native Proficiency
- Georgian Native Proficiency
- Russian Native Proficiency
- Mingrelian Native Proficiency *Mingrelian is a [Kartvelian \(Colchian\)](#) language of Western Georgia*

Professional Memberships

- 2022 – Now **Member**, [Association for Computing Machinery \(ACM\)](#)