Benjamin C. Warner
Curriculum Vitae (November 14, 2023)

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Google Scholar — GitHub — LinkedIn

Education

Washington University in St. Louis

Ph.D., Computer Science — September 2023 - Present
M.S., Computer Engineering — September 2020 - May 2023

Thesis: Feature Selection from Clinical Surveys Using Semantic Textual Similarity

Advisor: Chenyang Lu

B.S., Computer Engineering — September 2020 - May 2023

Pacific Lutheran University

B.A., Computer Science, *summa cum laude* — September 2018 - May 2020
Minor in Mathematics

Publications

Preprints

P1 **Warner, B. C.,** Xu, Z., Haroutounian, S., Kannampallil, T., Lu, C., *Utilizing Semantic Textual Similarity for Clinical Survey Data Feature Selection* 2023. arXiv: 2308.09892 [cs.CL]

Conference Proceedings

C1 Liu, H., Lou, S. S., **Warner, B. C.,** Harford, D. R., Kannampallil, T., Lu, C., *HiPAL: A Deep Framework for Physician Burnout Prediction Using Activity Logs in Electronic Health Records* in *SIGKDD* (2022). doi:10.1145/3534678.3539056

C2 **Warner, B.,** Crook, A., Cao, R., *Predicting the DJIA with News Headlines and Historic Data Using Hybrid Genetic Algorithm/Support Vector Regression and BERT* in *2020 International Conference on Big Data* (2020). doi:10.1007/978-3-030-59612-5_3

Journal Articles

J1 Lou, S. S., Kim, S., Harford, D., **Warner, B. C.,** Payne, P. R., Abraham, J., Kannampallil, T., Effect of clinician attention switching on workload and wrong-patient errors. en. *British Journal of Anaesthesia.* doi:10.1016/j.bja.2022.04.012 (2022)

J2 Odozor, C. U., Kannampallil, T., Ben Abdallah, A., Roles, K., Burk, C., **Warner, B. C.,** Alaverdyan, H., Clifford, D. B., Piccirillo, J. F., Haroutounian, S., Post-acute sensory neurological sequelae in patients with SARS-CoV-2 infection: the COVID-PN observational cohort study. *Pain.* doi: 10.1097/j.pain.0000000000002639 (2022)

J3 Lou, S. S., Liu, H., **Warner, B. C.,** Harford, D., Lu, C., Kannampallil, T., Predicting physician burnout using clinical activity logs: Model performance and lessons learned. *Journal of Biomedical Informatics.* doi:10.1016/j.jbi.2022.104015 (2022)

J4 **Warner, B.** PhysiCL: An OpenCL-Accelerated Python Physics Simulator. *Journal of Undergraduate Reports in Physics.* doi:10.1063/10.0006351 (2021)

Extended Abstracts

A1 **Warner, B. C.,** Kannampallil, T., Kim, S., *Autoregressive Language Models For Estimating the Entropy of Epic EHR Audit Logs* in *ML4H Findings* (2023). arXiv: 2311.06401 [cs.CL]

Miscellaneous

M1 Killebrew Bruehl, A., Knofczynski, J., **Warner, B.,** Shelton, R., *Combating COVID on College Campuses: The Impact of Structural Changes on Viral Transmissions* https://archives.pdx.edu/ds/psu/33611

M2 Abraham, J., Meng, A., **Warner, B.,** Budelier, T., Kannampallil, T., Role of Telemedicine in Remote Intraoperative Decision Support. *(internal publication)* (2022)

Research Experience

Cyber-Physical Systems Laboratory — August 2020 - Present
Advisors: Chenyang Lu, Thomas Kannampallil
Analyzed Epic EHR log data from physicians at Barnes-Jewish Hospital, and built and tuned machine

learning model to predict physician burnout scores, published as **C1** and **J1**. Performed analysis for a COVID-19/neurological pain study in **J2**, wrong-patient errors in **J3**, and anesthesiolgist team decision making in **M2**. Wrote a master's thesis and **P1** on using semantic textual similarity scores of feature/target names to select features.

altREU, Portland State University June - August 2020
Advisors: Christof Teuscher, Lisa Marriott, *et al.*
Developed an agent-based model of SARS-CoV-2 transmission in various classroom settings using the Mesa Python library. Published **M1**.

Capstone, Pacific Lutheran University September 2019 - August 2020
Advisors: Sean O'Neill, David Wolff
Developed an OpenCL-based Python physics simulation library. Includes a Numpy-based code units system, a toolset for metaprogramming OpenCL kernels, and some basic tools for light scattering simulations. Published `physicl` on PyPI and **J4**.

Intro to AI Research, Pacific Lutheran University September 2019 - August 2020
Advisor: Renzhi Cao
Designed a genetic algorithm/SVR model that utilized previous Dow Jones closes and BERT sentiment analysis upon *New York Times* articles to predict the closing value for the next day. Collected headlines using API and combined with FRED DJIA dataset, found RMSE improves by 36.5% with headlines. Published **C2**.

Teaching Experience

Washington University in St. Louis

Head Teaching Assistant, Data Structures & Algorithms Seminar	Fall 2021 - Spring 2023
Assistant Instructor, Autonomous Aerial Vehicle Laboratory	Fall 2022 - Spring 2023
Teaching Assistant, Machine Learning	Fall 2022 - Present
Assistant Instructor, Data Analysis with Applications to Financial Engineering	Spring 2022
Assistant Instructor, Probability & Statistics for Engineers	Fall 2021 - Spring 2022
Teaching Assistant, Data Structures & Algorithms Seminar	Spring 2021
Teaching Assistant, Data Structures & Algorithms	Spring 2021 - Summer 2021
Assistant Instructor, Electrical Laboratory for Mechanical Engineers	Fall 2021

Pacific Lutheran University

Tutor, Math & Computer Science	Fall 2019 - Spring 2020

Service

Reviewer, Machine Learning for Health (ML4H)	2023
President, Bear Nation Varsity Band	Fall 2022 - Spring 2023

Awards

Dean's Select Ph.D. Fellowship, Washington University in St. Louis	2023 - 2029
CSE Outstanding Senior Award, Washington University in St. Louis	Spring 2021
Dean's List, Pacific Lutheran University	Fall 2018 - Spring 2020

Industry Experience

Software Engineering Intern, MongoDB	June - August 2022
Software Engineering Intern, Comcast	June - August 2021