Ethan Davis
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Education

M.S., Computer Science *University of Washington Bothell*		Bothell, WA, 2024–2026
B.S., Computer Science *Oregon State University*		Corvallis, WA, 2020–2022
B.S., Mathematics *University of Portland*		Portland, OR, 2011–2015

Experience

Graduate Researcher *University of Washington Bothell* — Bothell, WA, 2024–present

Researching uncertainty-aware deep learning for safety-critical AI.
Developing a PyTorch/Pyro framework for Bayesian learning and real-time uncertainty in MI-EEG BCIs.
Led lab meetings, guided milestones, and contributed software engineering to research design.
Authored reproducible docs and onboarding materials to standardize EEG/BCI workflows.

Software Engineer *SeekOut* — Bellevue, WA, 2022–2024

Built and maintained large-scale ETL in C# with Azure Functions, Blob, and Cosmos DB.
Refactored legacy systems (UML/OOD/SOLID), improving maintainability and reliability.
Scaled processing with Spark/Databricks for larger datasets and higher throughput.
Developed automated tests (C#, NUnit/BDD), reducing technical debt and improving modularity.

Software Engineer *Independent Project* — Seattle, WA, 2017–2020

Built an image-sharing app with Java/Spring, Node.js, and AWS Lambda on microservices.
Applied distributed systems via Kubernetes and AWS for high availability and scale.
Automated provisioning with Vagrant and Ansible for reproducible deployments.

Software Engineer *StackBrew* — Redmond, WA, 2015–2017

Built a JS AST interpreter in Node.js for a collaborative editor; extended as a C++ addon for speed.
Designed and deployed microservices in Node.js/Go with MongoDB on GCP.
Researched collaborative editing algorithms (OT, CRDTs) to inform system design.

Projects

Metaheuristic Algorithms: Built a metaheuristics-based framework with uncertainty quantification to estimate solution reliability. GitHub — Paper

Matrix Multiplication: Benchmarked five GEMM implementations; hypothesis tests showed CuBLAS fastest for large matrix sizes. GitHub — Paper

Data Structures and Algorithms: Authored a 400-page DSA book on patterns, complexity, and efficient problem-solving. GitHub — Paper

Skills

Python, C++, C# • Spark/Databricks, SQL • Azure (Functions, Blob, Cosmos) • Docker, Kubernetes • PyTorch, CUDA

Teaching & Mentoring

Co-developed "Mathematics for Machine Learning" with Prof. Erika Parsons—revising curriculum, selecting a new text, and authoring assignments and grading rubrics.
Curated MI-EEG BCI research directions and reproducibility standards (MOABB, Riemannian pipelines, GNNs) to align teamwork and accelerate studies.

Conference Posters

PUMPS+AI 2025 Poster - ACM Europe Summer School.

Certifications

PUMPS+AI 2025 Statement of Accomplishment - CUDA workshops.