

MONTÉ B. HOOVER

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RESEARCH INTERESTS

- AI safety and LLM guardrails
- Long context reasoning and efficiency
- Foundation models for tabular data

EDUCATION

University of Maryland, College Park, MD PhD Computer Science	2023 – Present
University of Maryland, College Park, MD M.S. Computer Science	2021 – 2023
United States Military Academy, West Point, NY B.S. Computer Science with Honors, 3.95 GPA (7 th out of 1244 in class)	2006 – 2010

PUBLICATIONS

DynaGuard: A Dynamic Guardian Model with User-Defined Policies , Monte Hoover, Vatsal Baherwani, Neel Jain, Khalid Saifullah, Joseph Vincent, Chirag Jain, Melissa Kazemi Rad, C. Bayan Bruss, Ashwinee Panda, Tom Goldstein. <i>ICML Workshop on Models of Human Feedback for AI Alignment (ICML 2025)</i>	2025
Exploiting Sparsity for Long Context Inference: Million Token Contexts on Commodity GPUs , Ryan Synk*, Monte Hoover*, John Kirchenbauer, Neel Jain, Alex Stein, Manli Shu, Josue Melendez Sanchez, Ramani Duraiswami, Tom Goldstein. <i>ICML Workshop on Vector Databases (ICML 2025)</i>	2025
FAST: Factorizable Attention for Speeding up Transformers , Monte Hoover*, Armin Gerami*, Pranav Dulepet, Ramani Duraiswami. <i>Arxiv Preprint, Machine Learning, arXiv:2402.07901</i>	2024
Computing Acoustic Onsets Via an Eikonal Solver , Sam Potter, Monte Hoover, Dmitry Zotkin, Ramani Duraiswami. <i>IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA 2023)</i>	2023
Machine Learning at Microsoft with ML.Net , Zeeshan Ahmed, Saeed Amizadeh, Mikhail Bilenko, Rogan Carr, Wei-Sheng Chin, Yael Dekel, Xavier Dupre, Vadim Eksarevskiy, Senja Filipi, Tom Finley, Abhishek Goswami, Monte Hoover, Scott Inglis, Matteo Interlandi, Najeeb Kazmi, Gleb Krivosheev, Pete Luferenko, Ivan Matantsev, Sergiy Matushevych, Shahab Moradi, Gani Nazirov, Justin Ormont, Gal Oshri, Artidoro Pagnoni, Jignesh Parmar, Prabhat Roy, Mohammad Zeeshan Siddiqui, Markus Weimer, Shauheen Zahirazami, Yiwen Zhu. <i>ACM SIGKDD International Conference on Knowledge Discovery & Data Mining (KDD 2019)</i> .	2019
Disruptive Technology: Distributed High-Performance Computing , Monte Hoover. <i>Proceedings of The National Conference on Undergraduate Research (NCUR 2010)</i> .	2010

WORK EXPERIENCE

Microsoft Corporation Redmond, WA & Amman, Jordan	2016 – 2021
SUPPORT ENGINEERING MANAGER, Microsoft Azure	Apr 2019 – Feb 2021
• Led org of 43 engineers across 4 countries to provide support and advisory services for developers using Azure Kubernetes Service.	

- Created training program for non-traditional hires, tripling the diversity rate for Azure Kubernetes engineers in Europe, the Middle East, and Africa.

MACHINE LEARNING ENGINEER, Microsoft Research

Feb 2018 – Apr 2019

- Developed cross-platform functionality for NimbusML, a library of python extensions for ML.NET allowing for faster iteration of machine learning experiments.
- Presented at 2018's Machine Learning, AI and Data Science conference (MLADS), introducing NimbusML and demonstrating best practices for using transfer learning in image classification.

SOFTWARE ENGINEER, Microsoft Xbox

Jun 2016 – Feb 2018

- Optimized emulator performance with extremely low tolerances for variance: emulator has 16.6 ms to successfully reproduce original physics calculations and rendering calls before emitting unacceptable visual latency.
- Reverse engineered binaries in order insert new hooks to modern services and determined optimal bit-accuracy for translated floating point instructions.

United States Army

2010 – 2015

Bamberg, Germany & Wardak, Afghanistan

EXECUTIVE OFFICER (Captain, Medical Service Corps)

Apr 2013 – Mar 2015

- Led 10-person executive unit in planning and conducting the acquisition and sale of primary care clinics for Bavaria MEDDAC, the U.S. military's healthcare collective in southern Germany.

PLATOON LEADER (First Lieutenant, Medical Service Corps)

May 2010 – Apr 2013

- Led team of 18 paramedics in emergency medicine operations in support of military and humanitarian missions in Germany and Afghanistan; received Bronze Star for service in theater.

INTERNSHIPS

Goldman Sachs

Apr – May 2015

Developed tool for valuation of binary option trades; resulted in new analysis of over \$100M in transactions.

National Security Agency

Jun – Jul 2009

Conducted research for the Information Assurance Directorate.

AWARDS AND HONORS

Dean's Fellowship

2023

Awarded by the University of Maryland

National Physical Science Consortium Fellowship

2021

Six-year fellowship awarded by a consortium of U.S. national laboratories and federal agencies.

Bronze Star Award

2013

Awarded for service as a Medical Platoon Leader for the 173rd Airborne Brigade in Wardak Province, Afghanistan.

Ulysses S. Grant Memorial Award

2010

Awarded to West Point's number one ranked graduate in Computer Science.

INVITED TALKS

Azure Global Bootcamp – Amman, Jordan

2019

ML.NET: The Algorithms Behind Azure Cognitive Services

Microsoft AI School – Amman, Jordan

2019

Introduction to Machine Learning Algorithms

TECHNICAL SKILLS

Languages: Python, C++, CUDA, x86 Assembly

Machine learning: Pytorch, JAX, Scikit-learn
DevOps: Kubernetes, Terraform, Docker

VOLUNTEER WORK

- Co-founder of Nicaragua Christmas Project, an initiative to increase school attendance in rural Nicaragua.
- Consultant for B12, an EdTech startup based in Amman, Jordan.
- Interviewer and mentor for Microsoft's LEAP and MSSA diversity hiring programs.