

# CHARLES HETTERICH

CHETTERICH.COM

*Fullstack software engineer passionate about AI, Data Science, and decentralized governance*

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## SKILLS

Python	Rust	R	Solidity
Golang	Typescript	Javascript	SQL
C++	C#	Java	CQL
Pytorch	Docker	AWS	Cassandra
CI/CD	Product Design	Figma	Collaboration
Entrepreneurship	Leadership	Management	Communication

## EXPERIENCE

December 2025 – Present

### **Backend Blockchain Engineer, *Solana.fun***

- Traverse data on the Solana protocol to find and extract relevant information for a variety of calculations
- Developed backend service to calculate & aggregate historic OHLC (Open, High, Low, Close) price data for tokens during the bonding curve phase on our launch platform.
- Implemented API endpoints to provide real-time token price and market capitalization data.
- Engineered backend service to identify and rectify unrecorded transactions on our platform.

May 2024 – July 2024

### **AI Research Contractor, *OCAI LTD.***

- Acquired and refined large-scale dataset for training generative AI models using a custom data ingestion pipeline leveraging Python, FFmpeg, and Pytorch
- Conducted comprehensive research on modern generative video & talking-head model techniques, reporting key insights of technical ideas to non-technical management

January 2024 – May 2024

### **Learning Facilitator, *UT CS Department***

- Led a pod of 40 'Ethics in AI' students, facilitating and grading discussion
- Encouraged critical thinking and ethical reasoning among students through curated feedback, providing broad technical and ethical context, enhancing students' understanding of ethics in AI

March 2022 – September 2022

### **Research Assistant, *Dell Medical***

- Delivered multiple interactive computer activities to be used in trials with participants after a guided psychedelic experience, collecting performance data
- Revamped development process for quick deployment/accessibility across devices

March 2021 – January 2022

### **Software Engineer, *E Source***

- Led development of product delivering comprehensive storm insights to clients on an hourly basis, with a live data pipeline used to collect, analyze, clean, and transform raw weather data

- Improving query speeds of existing data pipelines by an order of magnitude with batched queries
- Enabled rapid development of python packages by formalizing our python CI/CD pipeline with Jenkins and writing comprehensive development documentation including best practices
- Orchestrate multiple Java Spring Boot microservices across docker containers and various AWS technologies
- Formalized Figma UI/UX process and unified designs from recently acquired startup

September 2019 – January 2021

**Founder & App Developer, *Table Date***

- Entrepreneurial dating app venture focused on human connection through text-based speed dating, positioned as a competitor to swiping based app such as Tinder, Bumble, and Hinge
- Designed UI/UX and built React Native app with backend hosted across AWS services such as EC2 and S3
- Formed short/long term business plans and delivered product presentations at pitching competitions to VC's

October 2018 – June 2019

**Software Engineer Intern, *MBMS***

- Made application more robust with end-to-end automated UI tests written in C# and Javascript
- Added features for clients to view/edit data by writing SQL queries fetched on Javascript frontend
- Enhanced codebase readability by writing thorough technical documentation

September 2017 – December 2017

**Teaching Assistant, *UB CS Department***

- Strengthened student understanding of C++ and other programming concepts taught in 'Data Structures and Algorithms' in weekly recitations
- Graded exams and assignments with feedback for approximately 250 students
- Answered a variety of students questions during weekly office hours

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## PROJECTS

October 2024 – Present

**Reinforcement Learning Simulation in Rust**

- Built 3D simulation to train reinforcement learning models on a sorting task, using Rust's Bevy game engine
- Wrapped & exported Rust simulation functionality to Python modules for training pytorch models

May 2023 – September 2023

**Point Cloud Network: An OOM Improvement in Linear Layer Parameter Count**

- Wrote research paper that discusses an alternative architecture to MLP linear layers, and presents experimental results (arXiv:2309.12996)
- Trained variant of AlexNet with 99.5% less linear parameters than the original
- Developed experimental CUDA kernels to be integrated within PyTorch Autograd
- Contributed open-source code and detailed implementation guidelines for Point Cloud Network architecture

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## EDUCATION

January 2022 - December 2023

**Masters of Science in Data Science, *University of Texas at Austin***

January 2017 - May 2020

**Bachelors of Science in Computer Science, *University at Buffalo***