

Conrad Feng

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EDUCATION

Emory University

B.S. in Computer Science, Expected May 2029

Atlanta, GA

Aug. 2026 – Present

University of Alabama at Birmingham (UAB)

Coursework in Biomedical Engineering; GPA: 3.92/4.0

Birmingham, AL

Aug. 2025 – May 2026

Relevant Coursework: Data Structures & Algorithms (IP), Computer Architecture (IP), Object-Oriented Programming, Linear Algebra, Mathematical Statistics (IP), Calculus III (*IP = in progress*)

EXPERIENCE

Machine Learning Researcher

May 2026 – Present

Algoverse AI Summer Research Program

Remote

- Leading hypothesis generation and experimental design for a mechanistic-interpretability study on how evaluation awareness relates to language in LLMs; built the probing and analysis pipeline (PyTorch, linear probes, OpenRouter).
- Developing an OpenRouter/vLLM pipeline to generate, filter, and validate mislabeled or confounded samples, reducing surface-level artifacts and other experimental confounds across 4 models and 1400+ samples.

Research Assistant

May 2023 – August 2026

UAB Division of Nephrology – Dr. Paul Sanders' Lab

Birmingham, AL

- Led the computational analysis across multiple nephrology studies (hypertension, acute kidney injury) by writing R and Python scripts to process raw RNA-seq from 40+ rat samples, enabling fully in-house differential expression analysis.
- Owned hypothesis and design choices in weekly PI meetings; **first-authored** an abstract published in *Physiology* (American Physiological Society), presented at the 2024 APS Summit.
- Identified 100+ significant molecular pathways by running DESeq2 and GSEA across 30k+ genes, contributing the computational analysis to a co-authored paper published in **Kidney International** (Impact Factor 21.8).

PROJECTS

Emory Course Atlas Model Context Protocol (MCP) Server | *Python, MCP, httpx*

2026

- Reverse-engineered Emory's undocumented course-search API and built an MCP server exposing 5 tools that let Claude answer natural-language questions about courses, prerequisites, and live seat availability.
- Designed a standalone, thread-safe API client with response caching and rate limiting; parsed unstructured HTML/embedded JS into structured data for LLM consumption. Expanding to other colleges using similar APIs.

Daily Score | *Svelte 5, Node.js, Vercel, Supabase, Google Calendar API*

2026

- Built a multi-user productivity dashboard that computes a daily score from color-coded Google Calendar events, by pairing a Svelte 5 + Vite SPA with Vercel serverless endpoints backed by Supabase Postgres.
- Ensured scoring correctness and reusability across the API and frontend, by designing the score model (output × discipline × recovery) as a pure, dependency-free library with a user-tunable parameter layer.

MNIST From Scratch | *Python, NumPy*

2026

- Built a 3-layer fully-connected neural network in pure NumPy—no PyTorch, TensorFlow, or autograd—achieving ~95% test accuracy on 10,000 held-out MNIST images.
- Implemented backpropagation from first principles, hand-deriving gradients for linear, ReLU, and loss layer via the chain rule and caching forward-pass activations for efficient reuse in the backward pass.

Automated RNA-seq Processing Pipeline | *Python, AWS EC2, Docker, DESeq2*

2025

- Built an RNA-seq processing pipeline on UAB's Cheaha HPC cluster, using Slurm job arrays to parallelize STAR alignment across 40+ samples, replacing outsourced analysis (\$1k/dataset)
- Cut per-dataset cost by 98% (\$1000→\$20) and turnaround from days to under 24 hours by scaling the workflow to 180 GB datasets on AWS EC2.

TECHNICAL SKILLS

Languages: Python, Java, R, SQL, TypeScript

Tools & Frameworks: PyTorch, NumPy, pandas, Matplotlib, Plotly, Node.js, Flask, FastAPI, React

Developer Tools: Linux, Git, Docker, Slurm, AWS (EC2), OpenRouter, DESeq2, GSEA