

# Kailin Xing

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## Education

### Northeastern University

Sep 2023 – May 2027

*Bachelor of Science in Computer Science, Minor: Computer Engineering | GPA: 3.6/4.0*

*Boston, Massachusetts*

- **Relevant Coursework:** Software Engineering, Data Structures and Algorithms, Object-Oriented Design (Java), Computer Operating Systems, Database Design, Computer Architecture, Networks
- **Competitions:** Harvard Undergraduate Trading Competition 5th Place Overall, 3rd Place News-Based Trading

## Technical Skills

**Languages:** Python, JavaScript, TypeScript, C, C++, SQL, Java, HTML, CSS

**Frameworks & Libraries:** React, Next.js, Vue.js, Django, Express.js, Node.js, Tailwind, Bootstrap, Selenium, Scrapy, BeautifulSoup, pandas, Streamlit, TensorFlow, NLTK, CUDA, PyTorch, TorchMetrics, OpenMP, Pthreads, OpenCV

**Cloud & Databases:** PostgreSQL, MySQL, AWS (Amplify, ECS, EC2, ELB), GCP (GKE, Ingress), Pinecone

**DevOps & Tools:** Docker, Kubernetes, Terraform, Redis, Celery, Slurm, Bash/Shell, Agile (Scrum), Nsight Systems, NVBit, Luthier

## Experience

### Boston Red Sox

Jul 2025 – Present

*Software Engineer Co-op*

*Boston, Massachusetts*

- Shipped features and bug fixes across **15+ projects** in Agile sprints, accelerating production release cycles.
- Migrated legacy applications from **C#/.NET** to Django and Vue.js, modernizing the technology stack.
- Architected resilient backend APIs and data models using Django MTV and PostgreSQL, impacting **500+ users**.
- Debugged GCP production incidents, reducing deployment failures by **40%** using Kubernetes and Terraform.
- Enhanced code quality and team velocity by reviewing **50+ pull requests** across backend and frontend on all apps.

### Northeastern University Computer Architecture Research Lab

May 2024 – Present

*Software Engineer/Research Assistant*

*Boston, Massachusetts*

- Simulated cache with 98% hits using **NVBit** and **CUDA**, diagnosing bottlenecks in Nsight Systems.
- Architected **Luthier** tools for **AMD** DBI, enabling cross-vendor profiling and kernel-level instrumentation.
- Analyzed batch-sizes across LLaMA, RNN, Transformer, and MLP models with Numpy, **PyTorch** and **TorchMetrics**.
- Standardized CNN training pipelines on CIFAR-10 and FashionMNIST with **CUDA**, delivering **40%** faster epochs.
- Automated machine learning HPC runs on Linux with **Slurm** sbatch **Bash** scripts for reproducibility.

## Projects

### International Student Data Platform

August 2025 – Present

- Architected analytics platform **reducing time-to-insight 40%** using Express.js (Apollo GraphQL), Prisma, PostgreSQL.
- Improved search relevance for **400K+ employers** via **Meilisearch** tuning and Redis caching.
- Reduced p95 latency 60% with **Node.js** and Apollo GraphQL optimizations, input validation, and rate-limiting.
- Automated CI with Jest, Playwright, GitHub Actions; halved pipeline time, doubled releases.
- Reduced **AWS** spend **2K/month** by right-sizing Docker services and caching background workloads.

### Baseball Game Management Dashboard

Jul 2025 – Sep 2025

- Shipped production releases serving **300+ users** for an outward-facing management portal.
- Structured modular server-side backend with 20+ models and serializers using **Django** MTV.
- Implemented real-time, low-latency ingestion using Celery, Redis, and **PostgreSQL**-backed REST APIs.
- Maintained zero downtime on GCP by managing **Kubernetes** GKE Ingress using Terraform CI/CD on GitHub Actions.
- Engineered 20+ views and templates with JavaScript **Vue.js**, Tailwind CSS, and Bootstrap.

### edgedetectr.com

Dec 2024 – Mar 2025

- Shipped a fullstack computer vision Edge Detection platform with **100+ monthly users** and 99% uptime.
- Parallelized 5+ image kernels for 3x CPU speedups using **C++**, **OpenMP**, and factory polymorphism.
- Deployed containerized services on **AWS** ECS with **Docker** behind ELB, frontend via AWS Amplify.
- Architected safeguarded REST API endpoints with fixed window rate limits in **Express.js** and **Node.js**.
- Developed 30+ responsive components and seamless uploads with **JavaScript**, **React**, and **Next.js** across devices.