LUKE TONG

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EDUCATION

University of Pennsylvania   Philadelphia, PA
BSE in Computer Science. Minor in Data Science, Math, Philosophy
GPA: 3.92, Major GPA: 4.00

EXPERIENCE

Software Engineering Intern   June 2024 – August 2024
TelVue Corporation   *Mount Laurel Township, NJ*
- Delivered feature tickets and bug fixes on broadcast MVC application in Ruby on Rails
- Developed an AI-driven solution to automate agenda creation for government meetings using prompt engineering
- Utilized WebVTT caption transcripts and OpenAI prompts to extract key moments/highlights with timecodes

Team Lead, Software Developer   January 2024 – PRESENT
Penn Labs, University of Pennsylvania   *Philadelphia PA*
- Create and maintain official web/mobile products used by over 100,000 Penn students
- Collaborate with UPenn administration to ensure products align with student needs and university guidelines
- Transitioning infra to leverage prerendered data, reducing server API calls by 70% and client load times by 50%
- Spearheaded comments feature to official course review system, including moderation and anonymization
- Lead a team of 6 developers, including delegating tasks, conducting code reviews, and enforcing best practices

Technical Project Lead   September 2023 – PRESENT
Penn Spark, University of Pennsylvania   *Philadelphia PA*
- Led a team of 9 developers in creating a web application to centralize events listings for UPenn students
- Architected user flow, API endpoints, and database schema, including OAuth, storage buckets, and SQL data

Undergraduate Teaching Assistant (Discrete Mathematics)   August 2024 – PRESENT
Computer & Information Science Department, University of Pennsylvania   *Philadelphia PA*
- Lead weekly lectures and host office hours to guide students through homework and better understand content
- Write and grade weekly problem sets, midterm and final exams, and recitation slides

PROJECTS

Netstagram | *AWS CDK, OAuth, SQL, ChromaDB, Apache Kafka, Apache Spark*   May 2024
- Created scalable Instagram clone, including authentication, post rank, and friend recommendation microservices
- Implemented real-time data streaming with Apache Kafka and adsorption using Apache Spark
- Developed RAG facematch feature utilizing image vector embeddings stored in ChromaDB
- Utilized AWS CDK (RDS, S3, EMR, ECS Lambda, SES, CloudFront, API Gateway) and Terraform for deployment

Sparkify | *PyTorch, AWS Lambda, AWS S3, Docker, Svelte*   September 2023 – December 2023
- Developed a web application to generate complex album art collages from user music tastes
- Implemented API integrations such as Spotify OAuth to fetch user's music taste profile
- Developed a Python script using PyTorch and Pillow deployed on AWS Lambda to manipulate album covers

One Million Checkboxes Clone | *WebSockets, Golang, Kubernetes, Redis, AWS*   November 2024 – December 2024
- Create website with 1 million checkboxes, synced for all users in real time using WebSocket
- Leveraged Redis Pub/Sub and concurrency to send/receive real-time update batches and full-state snapshots
- Utilize Terraform and Kubernetes for declaritive deployment on AWS EKS and Cloudfront

TECHNICAL SKILLS

Languages: Java, Python, C, SQL, JavaScript/TypeScript, Rust, Go, HTML/CSS, Ruby
Frameworks: React, Node.js, Django, Next.js, Rails
Developer Tools: Git, Docker, AWS CDK, Linux, Kubernetes, Terraform
Libraries: PyTorch, Pillow, numpy, Matplotlib, Apache Spark