

KINSHUK PHALKE

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Education

Georgia Institute of Technology

August 2021 - May 2024

Bachelor of Science in Computer Science, GPA: 4.0

Atlanta, Georgia

- **Concentration:** System and Architecture, Intelligence
- **Relevant Coursework:** Algorithms Honors, Discrete Math Honors, Datastructures and Algorithms, Object Oriented Programming, Operating Systems, Systems and Networking, Machine Learning, Adv/HP Computer Architecture
- **Clubs:** dependently-typed (President)

Experience

Georgia Tech High Performance Architecture Lab

Jan 2023 – Present

Undergraduate Research Assistant

Atlanta, Georgia

- Developing hybrid SSD-GPU architectures and scheduling strategies to maximize bandwidth and performance in GPUs.
- Read papers proposing novel approaches to SSD scheduling, including ZnG, SBIOS, and PGIS.
- Explored the internal workings of MacSim and explored DRAM Simulator Code.
- Utilizing strategies proposed in papers to develop an outline of a warp-based SSD scheduling algorithm.

NCR Corporation

May 2021 – August 2021

Software Engineer Intern

Atlanta, Georgia

- Developed a shopping cart micro service in Go Fiber deployed onto GCP to enable carting on PoS devices and websites.
- Designed core logic in CRUD operations of cart and service integration into NCR's BSP layer for related taxes, prices, store locations, promotions, returns and item attributes information and operations.
- Implemented YAML deployment files for the Kubernetes cluster, adding scalability and multi-tenancy.
- Architected a CI/CD pipeline to run testing suite, verify and publish deployments, publish artifacts onto GCP.
- Automated using a Bash script with 12 presets to change environment variables for different stages in production, run the Kubernetes cluster, create and update internal CA certificates and manage kubectl pods and deployments.

Notitia

November 2021 – Present

Software Engineer

Atlanta, Georgia

- Built a LDA model in Python for Topic Discovery capable of ingesting 50K tokens, tuned UMAP parameters to achieve a 80% accuracy in dimensionality reduction, utilized FAISS in clustering, designed WordCloud UI using React Flow.
- Optimized the frontend graph rendering by 60% and backend machine learning algorithm by 40%.

Projects

SpeechToCode

Python, ReactJS, Node.js

- Developed meta language parser in Python to create functional JavaScript, Python or Java code from spoken english.
- Implemented a visitor pattern, lexical scoping system, text based type inference system to create language output.
- Integrated with the speech to text machine learning flask server and designing the frontend in ReactJS.

DeusCL

Rust, Common Lisp, Yew Framework

- Developed a memory-safe REPL in Rust using a handwritten recursive descent parser and a visitor pattern evaluator.
- Implemented basic type inference, type checking, error handling system, lexically scoped garbage collector and a dynamic evaluation of functional environment and parameters.
- Designed a frontend in Yew Framework in Rust to enable users to use a web based simulation of REPL.

Publixmon

MongoDB, ExpressJS, React Native, NodeJS, Flask, Node.js

- Developed a Web3 mobile app in React Native allowing users to play NFT trading game to boost retail engagement.
- Integrated with the NCR BSP layer for order, catalog, inventory details and generate an NFT based on user history.
- Tested mining NFTs on the Ganache Blockchain via a node.js server to facilitate Smart Contracts from the App.
- Project won the first place at the NCR API Challenge at HackGT 8.

Enhance

Python, Tensorflow, Keras

- Developed a Res-Net Implementation of the Super Resolution GAN Paper for Super Resolution in Tensorflow.
- Implemented residual blocks and skip connection, Used the VGG-19 model to calculate the content loss of the model.
- Achieved perceptible improvements in image quality on the DIV2K dataset with a downscale factor 4.

Technical Skills

Languages: Python, Rust, Go, JavaScript, Java, C, C++, C#, TypeScript, Solidity, Bash

Frameworks: ReactJS, NextJS, NestJS, Astro, Express.js, Node.js, Flutter, React Native, Redux, Web3.js, Yew, Tauri

Machine Learning: Tensorflow, PyTorch, NumPy, Scikit-learn, Matplotlib, Pandas, Keras, NLTK

Technologies: Git, Linux, Docker, Postman, LaTeX, MongoDB, Redis, Kubernetes, GCP, AWS