

# KINSHUK PHALKE

☎ (404)-519-7018 ✉ [phalkekinshuk@gmail.com](mailto:phalkekinshuk@gmail.com) 💻 [kinshukphalke](https://kinshukphalke.com) 🌐 [xinslu](https://xinslu.com) 🔗 [kinshukphalke.com](https://kinshukphalke.com)

## 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, L<sup>A</sup>T<sub>E</sub>X, MongoDB, Redis, Kubernetes, GCP, AWS