# GOKUL VASUDEVA

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## EDUCATION

**Bachelor of Engineering in Computer Science and Engineering | PES University**, ECC, Bengaluru, India **Aug 2020**

- *Courses*: Algorithms, Data Structures, File Structures, Computer Networks, OOPs, Design Patterns, Operating Systems, DBMS, Data Mining, Big Data Analytics, Machine Learning, Artificial Intelligence, Web Development, Information and Network Security.

**Pre-University, Indian School Certificate (ISC) | Bethany Junior College**, Bengaluru, India **May 2016**

- *Courses*: Physics, Chemistry, Mathematics, Computer Science, English.

## SKILLS

**Languages & Build Systems:** C, C++, Java, Python, Go, Bash, Groovy, JavaScript, TypeScript, Bazel, Gradle, NPM, Jenkins.
**Libraries:** Express.js, Node.js, React.js, Highcharts, Protractor, Jest, Jekyll, FastAPI, Flask, Keras, Tensorflow, Numpy, Pandas, Scikit-learn, MLPack, OpenCV, Sktime, Facebook Kats, Facebook Prophet, Greykite.
**Technologies:** Git, GraphQL, REST, Micro frontend, Microservice, PostgreSQL, MySQL, Redis, Cassandra, MongoDB, Kafka, Celery, AWS, Grafana, Prometheus, Elastic Search, Kibana.

## PROFESSIONAL EXPERIENCE

**Member of Technical Staff III | ThoughtSpot**, Bengaluru, India **Aug 2022 – Present**

- **Incubated** and **developed SpotIQ Cortex**, a general-purpose **time series forecasting** and **anomaly detection** service with **heterogeneous model orchestration** including **model ensembling, invalidation and retraining** on new data ingress. Cortex allowed us to **forecast** and **predict customer KPIs** unlike anything else on the market, allowing for **threshold based alerts** and **better insights**.

**Member of Technical Staff II | ThoughtSpot**, Bengaluru, India **May 2021 – Jul 2022**

- **SpotIQ** is ThoughtSpot's **AI** driven analytics engine built in **C++**, where I worked towards **improving relevancy** of in-memory **AI generated insights** by **statistically modelling salient metrics** and writing **optimisation algorithms** to improve **querying efficiency** over cloud-connected data stores. Introduced a **machine learning library** to replace handwritten statistical modelling logic.
- Spearheaded and **took ownership** of migrating SpotIQ to v2, which involved building a **robust set of high throughput APIs** to **merge complex functionality** by interfacing with multiple services, unlocking **new features,** and **improving ROI**.
- Drastically **improved SpotIQ codebase** and **testing**, improved **query efficiency** and **error tolerance**, caught and **fixed a large number** of **critical bugs**, all of which allowed for **new use cases** and massive **improvement** to **SpotIQ reliability**.
- **Took ownership** and was the **POC** for **SpotIQ Comparative Analysis**, significantly improving it in the process. Worked on improving a **scheduler** built using **Go**. Built **Jenkins pipelines** for performing **ETL** on testing metrics from **Gradle**.
- **Took complete responsibility** for and **developed** the v2 implementation of **SpotIQ R Analysis**. Improved the **Bazel build system**.

**Software Engineer | Societe Generale**, Bengaluru, India **Nov 2020 – Apr 2021**

- Built a **data analytics platform** for performance reports, orchestrating **self-healing** and **automations** through **Azure**. Developed a **RESTful** universal quiz and survey platform using the **MERN stack**, with anti-cheat measures and asynchronous session persistence.
- Collaborated on augmenting the internal asset management platform with a task verification queue microservice using **Kafka**.

## PROJECTS AND CONTRIBUTIONS

- **Crypticket -** A **fully offline** capable **cryptographic ticket generation** and **authentication** platform using **Service Workers** and **Local Storage** caching. Built as a **responsive PWA** from the ground up using **React**, utilising **EdDSA Elliptic Curve Cryptography**.
- **MonoDAC-** A **Monocular Image Depth Estimation** system by training a modified **DeepLabv3+ encoder decoder**, utilising a **Fully Convolutional Deep Neural Network**, employing **Atrous Convolutions**, **ASPP** and an **XCeption** feature extraction network, with **3D Point Cloud** visualisation. Developed an accompanying **web platform** supporting **real-time** wireless image capture and depth inference.
- **Wuasta -** Built a **Predictive Alarm Assistant** as an **Android app**, which pragmatically wakes you up at just the right time, taking into account **real-time traffic conditions** and **historical data**. It utilised **Google Maps Distance Matrix API** and a **recursive optimisation** algorithm to find the **optimal time** at which a user needs to depart from a location to arrive at another location at a predefined time.
- **YTrendNet -** Analysed a YouTube video interaction dataset and trained an **Artificial Neural Network** to infer how long a YouTube video stays trending by pre-processing and converting relevant features into latent space, and one hot encoding the result.

**Technical Blog and Open Source**

- Authored several **technical** and **philosophical posts** on **programming**, **designs**, **concepts**, and **challenging problems** I've faced.
- Open sourced the **implementations** of **novel algorithms**, **scripts**, and **solutions** to competitive problems.

## ACHIEVEMENTS AND AWARDS

**HP Code Wars | Honorary Award** **Dec 2015**

- For solving the **most difficult** coding problems in the **shortest time vs 300 teams**.

**InGenius Hackathon | 1st Place Award** **Sep 2017**

- Built an **Android app** utilising **Google Maps APIs** to find a group **meet up location** considering **real-time traffic conditions**.

**ThoughtSpot | India R&D Excellence Award** **Mar 2022**

- For taking strong ownership of SpotIQ and consistency in delivering on high impact deliverables with diligence and customer empathy.

**US Patent and Trademark office | Insight Mining Techniques** **May 2022 - pending**

- Co-inventor of Cortex, using which anomalies can be detected in data through time series forecast deviations.