SUNIT KUMAR SINGHA

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EDUCATION

- **Indian Institute of Technology, Kharagpur** B.Tech in Electrical Engineering (2018-2022)
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  Micro-Specialization in Artificial Intelligence and Applications
  CGPA: 9.13/10 (B.Tech), 9.81/10 (Micro-Specialization)

- **Sai International School, Bhubaneswar, India** Central Board of Secondary Education (CBSE) — Marks: 92.6%
- **Modern Public School, Balasore, India** Central Board of Secondary Education (CBSE) — CGPA: 10/10

WORK EXPERIENCE

- **Software Development Engineer 2**   July 2022 - November 2024
  Honeywell Connected Enterprise   *Bengaluru, India*

  Honeywell Forge Identity and Access

  - Designed and implemented highly scalable RESTful microservices for **Forge Identity and Access management** using NodeJS ensuring robust authentication and authorization workflows while achieving 95%+ unit test coverage for reliability and maintainability
  - Collaborated on the **Login Deployment pipeline**, integrating **Prometheus pods** for comprehensive monitoring and metric collection.
  - Configured key performance metrics, including **login response time**, **policy agent access time**, **Forge access time**, and **database fetching time**, to enable proactive issue detection and optimize system performance.
  - Implemented **Azure Key Vault** for secure storage and management of strong passwords, leveraging its encryption capabilities and access policies to safeguard sensitive credentials. Integrated it seamlessly with applications to ensure compliance with security standards and mitigate risks of unauthorized access.
  - Rectified over **50 issues** within **BlackduckHub** and **Coverity** while addressing security concerns, alongside enhancing unit testing coverage for the **SonarQube** Report to achieve above **95% coverage**.

  Honeywell Forge Digital

  - Developed customer onboarding features in Onestep Connect for the **Honeywell Forge Digital Service using the .NET framework**, delivering solutions characterized by efficiency and scalability.
  - Leveraged **PostgreSQL's advanced indexing** and **parallel query execution** to design efficient data models and develop **highly scalable RESTful APIs**.
  - Achieved a **35% reduction in query execution times**, significantly enhancing data flow and improving the overall user experience.
  - Actively participated in **Agile software development practices**, including daily stand-ups, sprint planning sessions, and team retrospectives, leading to the delivery of **96% of sprint goals** on time.
  - Developed a deep-level understanding of the **architectural design** and how different components interact with each other for the Forge Access and Identity project.
  - Facilitated open dialogue during Agile meetings, identifying three key process optimization areas and implementing solutions that reduced unnecessary meeting durations, improving overall team efficiency

SKILLS AND EXPERTISE

- **Programming Languages:** Node.js, Python, C (.NET), PostgreSQL, C/C++, Java, Golang
- **Libraries and Frameworks:** TypeScript, Next.js, React, Express.js, TensorFlow, Keras, Generative AI
- **Cloud Platforms and Tools:** Microsoft Azure, Docker, Kubernetes, Git, Bitbucket, Bamboo, Kibana, Grafana
- **Software Development:**   Agile (Scrum), Test-Driven Development (TDD), Microservices Architecture

Projects

- **Software Engineering Intern**   May 2021 - July 2021
  Data-Analytics Internship — Honeywell Connected Enterprise-Building Technologies   *Bengaluru, India*
  Executed detailed evaluations of real customer data from AHUs, leading to the creation of an energy optimization report; findings were integrated into operational protocols, influencing energy management strategies for 10+ clients.

  - Applied multivariate time series analysis and developed a Vector Auto-Regressive algorithm to predict demand responses to setpoint changes, identifying zonal plants for optimization. Designed a control system-based mathematical model using Laplace transforms to validate gains, reducing computational time significantly.

- **Backend-Driven AI Code Generation with Real-Time UI Preview**   Sept 2024 – Jan 2025

  - Designed and implemented a high-performance backend using **Go**, integrating **Redis** for caching and **OpenAI's GPT-3** for AI-driven code generation, enhanced with **RAG** for improved responses. Optimized API performance with **goroutines**, **connection pooling**, and **rate limiting** to handle high-traffic loads efficiently. Ensured seamless frontend integration with a robust backend architecture, supporting **real-time UI previews** and fast code execution.

- **Blue Yonder's Next-Ge Optimized Delivery Ecosystem Event**
  Inter IIT Tech Meet 10.0 Low Prep. Event

  - Developed a **3D drone deployment solution** leveraging **NSGA-II** for dynamic re-planning around no-fly zones and multiple warehouses. Optimized demand fulfillment, reducing total costs (energy and maintenance) by **25%** while minimizing drone usage by **20%**. Enhanced operational efficiency, enabling real-time adaptability to changing constraints.

Academic Achievements

- **Joint Entrance Exam (Advanced) 2018:** Secured an All India Rank of 2664 out of 1.3 million candidates.
- Ranked under top 7% in IIT Kharagpur and successfully changed to Electrical Engineering department by the end of the first year.
- Achieved global ranks of 445 in Google Kickstart 2021 Round F, 1497 in Facebook Hackercup 2021 Round 2 (top 4%), and 36 in Credit Suisse Global Coding Challenge 2022.
- Secured 45th rank in **Ode 2 Code** by Xiaomi India (September 2021) and ranked within the top 200, advancing to the finals of **JUMPSTART 2021** by Publicis Sapient.