

# SULEKHA SINGH

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## EDUCATION

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**Georgia Institute of Technology**, Master of Computer Science

Expected 2024

Relevant Coursework: Software Development Process, Machine Learning, Knowledge Based AI, Database systems & design, Computer Vision, Data & Visual Analytics, Cloud Computing

## TECHNICAL SKILLS

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<b>Languages</b>	Python, R, Java, Kotlin, C##, C++, Javascript/HTML/CSS, Cloud, SQL, Bash
<b>Frameworks &amp; Libraries</b>	Scikit-Learn, PyTorch, Keras, Tensorflow, NumPy, Pandas, OpenCV, Node.js
<b>Visualization</b>	React, D3.js, Power BI, Tableau, Quicksight, Matplotlib, Plotly, Seaborn, Leaflet
<b>Tools</b>	Git, Linux, Docker, AWS (DynamoDB, Kinesis, S3, EC2), Jira

## RELEVANT PROJECTS

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**Android App (End to End).** Built a Job-Compare Android App by using Java and Kotlin languages in Android Studio. Developed component diagram, deployment diagram, class diagram, sequence diagram and user interface design based on the features, assumptions and constraints. Integrated SQLite database to store data and created automated tested scripts using Espresso and Junit Frameworks.

**Trading Stocks Agent (ML).** Build an agent using machine learning methods and technical indicators to trade stocks. Build a Classification-based learner using the random forest, Reinforcement-based learner using the Q-learning, and Optimization-based learner by developing an objective function and using the Scipy module.

**Housing Prediction (End to End).** Developed an interactive housing price predictor using React.js and D3.js, and employed machine learning random forest and gradient boost regression models. Scraped over 1M datarows using Apache Nifi and implemented a micro service architecture using Docker containers and utilized Flask Restful APIs.

**Stereo Correspondence.** Employed computer vision techniques and advanced energy optimization via Loopy Belief Propagation over Markov random fields, yielding precise disparity from a pair of images. Conducted performance analysis by comparing results to a ground truth dataset, demonstrating the efficacy of the employed techniques.

**AI Agent Solving Raven's Matrices.** Designed an AI agent utilizing OpenCV and advanced AI techniques to tackle Raven's problems by identifying and establishing relationships within answer matrices, deducing the missing puzzle piece. Leveraged computer vision capabilities to analyze visual patterns and solve complex reasoning puzzles.

## LEADERSHIP AND WORK EXPERIENCE

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**VDC Project Manager** — Turner Construction Company, *Atlanta, GA*

Jan 2019 - Present

- Led a team of VDC specialists in the implementation of BIM technologies and conducted clash detection and coordination meetings to resolve design conflicts, resulting in a significant reduction in field changes and rework.
- Collaborated with architects, engineers, and subcontractors to identify value engineering opportunities.
- Implemented laser scanning technology to capture as-built conditions, improving project accuracy.
- Conducted regular training sessions for project teams on BIM software, clash detection, model collaboration, and Power BI for data visualization.
- Developed code in VR immersive software Unity for safety inspection and training using 3D models.
- Built Power BI dashboards for analyzing BIM data, safety and operations data and to successfully use data to share the insights and performance with the project team and management.

**Graduate Research Assistant** — Georgia Institute of Technology *Atlanta, GA*

Aug 2017 - May 2018

- Built API to extract Revit data and Text mined BIM log files to extraxt design specific actions.
- Performed Classification and Social Network Analysis on text-mined log files to identify the relationship in actions.
- Publication: "Leveraging Blockchain Technology in AEC Industry during Design Development Phase", ASCE International Conference on Computing in Civil Engineering 2019.