

# Gowtham Senthilkumar

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## EDUCATION

### University of Wisconsin – Madison

Madison, WI

M.S. - Industrial Engineering: Systems Engineering and Analytics | *GPA: 3.86/4.0*

May 2023

- Relevant Courses: Machine Learning, Optimization, Industrial Data Analytics, Simulation Modelling

### Vellore Institute of Technology

Vellore, India

B. Tech. – Mechanical Engineering | *GPA: 3.7/4.0*

June 2020

- Relevant Courses: Operations Research, Statistical Quality Control

## SKILLS

**Programming:** Python, MATLAB, Julia, C, R Studio, SQL

**Python & ML Libraries:** NumPy, Pandas, Matplotlib, Seaborn, SciKit-Learn, PyTorch, SciPy, TensorFlow, Gurobi

**Analytics & Simulation:** MS Excel, Tableau, MiniTab, Arena, SolidWorks

**ML & DL Techniques:** Data Mining, ETL, Regression, Ensembles, Naïve Bayes, SVM, CNN, RNN

## RESEARCH

### FEAP Lab – University of Wisconsin, Madison

Feb – Aug 2023

- **Surface Anomaly Detection from 3D point cloud data** | *Python, TensorFlow*  
Finalist - DAIS Best Student Paper Competition (2023), IISE annual conference.
- **Classification of Pavement Defects using Deep Learning** | *Python, Keras, Revo Studio*  
Classification of two types of surface level defects in pavements, utilizing high dimensional data representations, to enable additive manufacturing-based repair and restoration.

### Academic Research

- **Predicting the 2022 FIFA Men's and 2023 FIFA Women's World Cups** | *Python, SciKit-Learn, Jupyter*  
Forecasted the world's biggest sporting spectacles using logistic regression and ensembles to anticipate outcomes of games with 80% accuracy, easily outperforming purely ranking-based predictions.
- **Shift Scheduling for employees in a Medical Facility** | *Julia, Gurobi*  
Formulated a Mixed Integer Problem to minimize the "shift preference loss" to less than 5% in scheduling employee hours, fulfilling the organization's staffing requirements and historical shift patterns.
- **Impact of natural/man-made calamities on expenditure in food supply chain** | *Tableau, MS Excel*  
Investigated a \$50 Billion drop-off in expenditure due to the 2008 economic recession and contrasted it to the impact of the COVID-19 pandemic with time series and regression analysis.

## EXPERIENCE

### GDB International, Inc. | Industrial Engineer

Aug 2023 – Present

- Implementation of process improvement mechanisms to improve systemic efficiency by a projected 50%.

### Godrej Storage Solutions | Project Trainee/Intern

Jun – Jul 2019 & Dec 2019 – Feb 2020

- Collaborated with the Quality Control department in a 6 - member team, utilizing Design of Experiments (DoE) and Analysis of Variance (ANOVA) to identify an 85% influence of a particular interaction effect that caused ~1mm (6.25%) error.

### Wisconsin Union | Student Supervisor – Badger Market in Engineering

Jan 2022 – May 2023

- Directed 5-7 student workers to implement streamlined processes for inventory management and customer service, improving sales by 15% and heightening overall team performance and customer satisfaction.

## CERTIFICATIONS

Machine Learning with Python | Data Analysis with Python | Mathematics for Machine Learning |  
AWS Fundamentals | CSWA in Mechanical Design