Gowtham Senthil Kumar

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in [LinkedIn](#) | ◯ [GitHub](#)

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 2023 - *Present*
- **Surface Anomaly Detection from 3D point cloud data |** *Python, TensorFlow, Google Cloud*
  Runner-Up **-** DAIS Best Student Paper Competition (2023), IISE annual conference.
- **Classification of Pavement Defects using Deep Learning |** *Python, Keras, Revo Studio*
  Engineered a CNN-based algorithm to classify surface level pavement defects, achieving a test accuracy of 97%, to enable additive manufacturing-based repair and restoration.

Academic Projects
- **Predicting the 2022 FIFA World Cup |** *Python, SciKit-Learn, Jupyter*
  Forecasted the 2022 FIFA Men's World Cup using logistic regression and ensembles to anticipate outcomes of games with 80% accuracy, easily outperforming 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

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.

University of Wisconsin - Madison | *Grader*   Jun – Aug 2022
- Guided class of 30 students for ISyE 575: Introduction to Quality Engineering for summer course cycle.

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 efficiency by 15% and heightening overall customer satisfaction.

CERTIFICATIONS

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

** - willing to relocate