# Nikhil Sulegaon

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## Education

- **University of Colorado Boulder** — Boulder, CO
  **Master of Science** in *Computer Science*; **GPA: 3.8/4.0** — *Aug 2017 – Present (Expected: May 2019)*
  *Relevant courses: Machine Learning, NLP, Probabilistic Models for ML, Computer Vision, and Big Data Architecture*
- **BMS College of Engineering** — Bangalore, India
  **Bachelor of Engineering** in *Information Science and Engineering*; **GPA: 8.92/10.0** — *Sep 2011 – May 2015*

## Programming Skills

- **Languages**: Python, C#, Java, Ruby, C++, C, MATLAB, MS SQL Server, Postgres, MySQL, & MongoDB..
- **Frameworks**: Tensorflow, Keras, ASP.NET, Ruby on Rails, SpringMVC.
- **Data Science**: Neural Networks, KNN, SVM, KMeans, LSTM, Linear Regression, and, Probabilistic models.

## Projects

- **Object 3D Pose Estimation (Python, Tensorflow, C#, Unity) Links:** *Demo*, *Paper*, *GitHub*:
  - Using a CNN to predict an object's 3D pose using its image to create real and virtual object interactions in a Hololens.
  - Tweaked the CNN to use a custom Tukey's Biweight Loss function thereby achieving a test accuracy of 95%.
- **Deception Detection in hotel reviews (Python, Sklearn, NLTK)**:
  - Implemented a Naive Bayes model and an SVM to detect deceptive or fake hotel reviews using a small dataset.
  - An SVM with Feature Engineering techniques achieved an accuracy of 64% with a standard deviation of 5.2%.
- **Navisys (Java, Android, Python, C++, OpenCV) Links:** *Report*, *Synopsis*.:
  - An embedded system fitted into a jacket that provides turn-by-turn navigation to the visually impaired.
  - Jacket also detected humans and obstacles using Ultrasonic sensors, & Image processing techniques of Haar Cascades.
- **Named Entity Recognition (Python, Sklearn, NLTK)**:
  - Achieved 93% Accuracy and a 52% F1 measure when using a Perceptron to perform NER tagging of a sentence.
  - Implemented an HMM as a baseline model that was batch-trained by chuncking data due to large size of dataset.
- **Handwritten Number Recognition (Python, Keras)**:
  - Used KNN(acc: 96%), SVM(acc: 97%), and CNN(acc: 98%) models to recognize handwritten numerals.
  - Different models were compared based on accuracy, precision, etc, using Cross Validation and L2 regularization.
- **Sentiment Analysis of Movie Reviews using IMDB dataset (Python, Keras)**:
  - Used Naive bayes with Laplace smoothing, SVM and RNNs to compare and contrast the performance of each model.
  - Also analyzed and compared LSTMs and GRU for sequential prediction with pre-trained word embeddings (GloVe).

## Experience

- **Teaching Assistant** (S/W Dev Methods & Tools) - **University of Colorado Boulder** — Sep 2017 - Present
  - Teaching 60 students, full stack development and deployment of applications using core Agile principles and TDD.
- **Application Developer** - **ThoughtWorks**, Bangalore, India — Aug 2015 - Aug 2017
  - **Food-Supplies Management - PoC (Python, SVM, Keras)**:
    - A tool built using ML, used to plan the amount of food to be prepared in order to reduce wastage in the office.
  - **Project Management Tool (C#, Silverlight, ASP.NET)**:
    - A Multi-tenant SaaS application having about 2000 tenants and 2000-5000 users per tenant.
    - Spearheaded the re-architecture of the legacy application. Also increased the test coverage from 16% to 65%.
    - Optimized complex SQL queries to improve the performance of key features by around 80%.

## Achievements

- 'Best Research Project' award at the IEEE International Advance Computing Conference 2015, held at B.M.S College of Engineering. The project also featured in the *newspaper(link)* for its novel approach of implementation.