Tejas Shivanand Mane

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Education

- **University of Pennsylvania** — Philadelphia, U.S.A
  MS in Scientific Computing, GPA: 3.67/4.0 — *Aug. 2018 – Present*
- **Birla Institute of Technology and Science (BITS)** — Pilani, India
  Bachelor of Engineering in Mechanical Engineering; GPA: 8.49/10.0 — *Aug. 2013 – July. 2017*

Courses

Graduate Courses: Machine Learning, Biomedical Image Analysis, Big Data Analytics, Operating Systems, Databases and Information systems, Algorithms and Computation.
Relevant Undergraduate courses: Data Mining, Object Oriented Programming, Neural Networks and Fuzzy Logic.

Experience

- **Research Assistant, University of Pennsylvania** (Jan 2018 - Present): Currently working under Dr. Elena Bernardis in the field of computational dermatology, using deep learning models to study the progression of Alopecia Areata (Hair Loss) using semantic image segmentation.
- **Junior Research Fellow, IIT Gandhinagar** (Aug 2017 - July 2018): Worked as a Junior Research Fellow under Dr. Dilip Sundaram in the field of Computational Material Science and published articles in renowned Elsevier journals such as **Computational Material Science** and **Surface Science**.

Selected Projects

- **Sentiment Analysis using Deep Learning** — Philadelphia, USA
  Course Project — *October 2018 - December 2018*
  - Developed machine learning models to detect insincere questions using the Quora dataset available on Kaggle.
  - Worked with models such as Random Forest, CNN and LSTM using Keras and Sklearn.
- **Semantic Image Segmentation using Deep Learning** — Philadelphia, USA
  Course Project — *September 2018 - December 2018*
  - Developed deep learning models such as MLP and CNN to achieve $\sim 89\%$ segmentation accuracy on the test data set based on Alopecia areata (Hair Loss).
- **Development of 2D2V/2D3V Particle-In-Cell code** — Pilani, India
  Undergraduate's thesis — *December 2016 - June 2017*
  - Wrote a code in python (1000+ lines) using Arrayfire's high performance libraries, to model the Vlasov-Maxwell system of partial differential equations which are used to study collisionless plasmas.
- **Particle Swarm Optimized Active Suspension System** — Pilani, India
  Course Project — *August 2016 - December 2016*
  - Built a superior active suspension system on MATLAB, modeled as a dual mass-spring-damper system using a Fuzzy Logic controller whose inputs were optimized via the Particle Swarm Optimization (PSO) algorithm.
- **Stabilizing Bipedal walking via Q-learning** — Pilani, India
  Course Project — *August 2016 - December 2016*
  - Modeled human bipedal walking as an inverted double pendulum model where the appropriate torques acting at the joints for stable bipedal walking were learnt using the Q-learning algorithm.

Technical Skills

- **Languages**: Python (Proficient), C/C++ (Intermediate), Java (Basic), SQL (Intermediate)
- **Tools and Technology**: Git, MATLAB, Excel, Inkscape, LaTeX