Shashank Hegde

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Education

- **University Of Southern California** — Los Angeles, USA
  Master of Science in Electrical and Computer Engineering - Machine Learning & Data Science — *2019 – 2021(Expected)*
- **National Institute of Technology Karnataka** — Surathkal, India
  Bachelor of Technology in Electrical and Electronics Engineering — *2013 – 2017*

GPA: 8.17/10 Thesis GPA: 9.5/10

Relevant Courses: Calculus, Linear Algebra and Probability Theory, Signal and Systems, Digital Signal Processing, Digital Processing of Speech and Audio, Advanced Digital Signal Processing, Control Theory, Numerical Methods, Pattern Recognition and Machine Learning

Student Organizations: Association for Computing Machinery (ACM) NITK Chapter, SPICMACAY Mangalore Chapter, NITK Music Club

Professional Experience

- **Fidelity Investments** — Bangalore, India
  Software Engineer at Asset management technology — *July 2017 - July 2019*
  - Develop applications based on Supervised Machine learning for trade order selection and efficient execution.
  - Research on Reinforcement learning and its application on portfolio construction in equity trading.
  - Working with the equity trading team to develop and support the java and python based trading engine.
- **Fidelity Investments** — Bangalore, India
  Summer intern as Software Developer — *May 2016 - July 2016*
  - Worked with the fixed income research team to build a complete end to end application using .NET
  - Construct a Excel VBA based solution for Fixed income analysts.
- **St. Aloysius College, Mangalore University** — Mangalore, India
  Research intern at Laboratory of Applied Biology, Kuppers Biotech Unit — *May 2014 - June 2015*
  - Built a light chamber with variable light intensity for different wavelengths of light, for algal biofuel production.
  - Studied the effect of light (wavelength and intensity) on enhanced algal bio-fuel production and predicting growth trends.

Publications

- Hegde, S., Kumar, V., and Singh, A. (2018). *Risk aware portfolio construction using deep deterministic policy gradients*. IEEE Symposium Series on Computational Intelligence (SSCI) Bangalore, Nov. 2018.
- Severes, A., Hegde, S., DSouza, L. and Hegde, S. (2017). *Use of LED for enhanced lipid production in micro-algae based bio-fuels and predicting growth patterns*. Journal of Photochemistry and Photobiology B: Biology, Elsevier, Volume 170, Pages 235-240. [link]
- Singh, A., Kumar, V., and Hegde, S. (2018). *Reinforcement Learning: AI that creates AI*. Proceedings of Data Science Congress, Mumbai, May 2018. [pdf]

Achievements and Academic Projects

- **Soda bottle classification contest**[link]**:**
  Winner of image classification contest by Deep Cognition. I built a robust (100% test accuracy) Neural Network using a variant of the VGG architecture.
- **Prosthetic Voice (Undergraduate Thesis)**[pdf]**:**
  sEMG signal controlled speech production aid for speech challenged individuals using Machine Learning. The signals were collected, filtered, pre-processed and then fed to a classifier that would predict the hand action performed. The action was translated to speech.
- **Emotion Detection**[pdf]**:**
  A Machine Learning driven emotion detector using variations in speech signals. Using MFCC feature extraction and PCA on many other features, we built a emotion classifier.

Programming Skills

- **Languages**: Python, MATLAB, Java, SQL, Angular JS, C#
- **Technologies**: Tensorflow, Keras, Camel, Kafka, .NET, Google Dialogflow, Amazon Lex