

Avinash Ummadisingu

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📄 <https://ummavi.github.io/>

Interests

Machine Learning, Reinforcement Learning, Deep Learning

Education

2016-2018 **M.Sc. (Informatics)**, *Università della Svizzera italiana*, Lugano, Switzerland

2010-2014 **B.E. (Computer Science)**, *Bangalore Institute of Technology*, Bangalore, India

Masters Thesis

Title *Improving Sample Efficiency in Hindsight Policy Gradient Using Actor-Critic Architectures*

Supervisors Prof. Dr. Jürgen Schmidhuber & Dr. Paulo E. Rauber

Work Experience

July 2014 – **Mu Sigma Business Solutions** (*Innovation & Development Dept.*)

June 2016 *Computer Vision*: Developed a system that tracks the progress of Blackjack games through cameras and generate real-time analytic insights for one of the world's largest casino chains.

Reinforcement Learning: Worked with a team of 4 exploring Reinforcement Learning for Robotics and Algorithmic Trading.

Semi Supervised Learning for Computer Vision: Built a system applying Active Learning to allow users to interactively give feedback about object detections and automatically re-train and evaluate models for generic multi-class image detection problem.

Papers & Patents

2018 **Hindsight Policy Gradients**, Paulo Rauber, Avinash Ummadisingu, Filipe Mutz, Juergen Schmidhuber arXiv:1711.06006

2017 **ABCpy: A High-Performance Computing Perspective to Approximate Bayesian Computation**, Ritabrata Dutta, Marcel Schoengens, Avinash Ummadisingu, Jukka-Pekka Onnela, Antonietta Mira arXiv:1711.04694

2016 **Analytics system and method: Patents filed for work on Blackjack Game Tracking and Insight Generation System using Computer Vision.** Patent Numbers: AU2015261614/US20170069159A

Skills

Programming PYTHON (NumPy, Tensorflow, Chainer, Keras, OpenCV), C/C++, MATLAB
Languages English, Hindi, Telugu, Italian (Basic)

██████████ Awards and Recognition

- October 2015 Received a Spot Award from Mu Sigma for “Initiative and drive while researching and implementing the Reinforcement Learning Algorithm for Autonomous Car Control”.
- June 2015 Received a Spot Award from Mu Sigma for work on the Poker Chip recognition and counting algorithm and being an “Effective contributor of the highest order”.
- December 2013 Won 1st place in the “Programmer’s Marathon”, a Programming Contest organized by Hitachi Consulting – Global Development Center.
- March 2013 Placed 4th out of 12,000 teams from across India in the national level “TCS Testimony Contest” on Software Testing and General Software Engineering Practices, conducted by Tata Consultancy Services (TCS).