

VIKRAM MURALI MANDIKAL

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EDUCATION

The University of Texas at Austin

Master of Science in Computer Science

Austin, Texas

Aug 2019 - May 2021 (Expected)

National Institute of Technology Karnataka (NITK), Surathkal

Bachelor of Technology in Information Technology

Surathkal, India

GPA: 9.79/10, Gold Medalist (Rank: 1/104)

Aug 2015 - May 2019

PUBLICATIONS

1. **Mandikal Vikram**, Steffen Wolf, “A GAN framework for Instance Segmentation using the Mutex Watershed Algorithm”, Smooth Games Optimization & Machine Learning Workshop, Neural Information Processing Systems conference (NeurIPS) 2018, Accepted for Spotlight presentation.
2. **Mandikal Vikram**, Aditya Anantharaman, Suhas B S and Sowmya Kamath, “An Approach for Multi-modal Medical Image Retrieval using Latent Dirichlet Allocation”, ACM India KDD CoDS-COMAD 2019 (Oral Presentation) · A short version accepted at the AI for Social Good Workshop, Neural Information Processing Systems conference (NeurIPS) 2018.
3. **Mandikal Vikram***, Aditya Anantharaman*, Suhas B S*, Ashwin TS and Ram Mohana Reddy, “Kinect Based Suspicious Posture Recognition for Real-Time Home Security Applications”, IEEE India Council International Conference (INDICON) 2018. * equal contribution

PAST INTERNSHIPS

Microsoft Research

Research Intern, Intelligent Devices Expedition group

Advisors: Dr. Harsha Simhadri and Dr. Prateek Jain

Bangalore, India

August 2018 to December 2018

and May 2019 to July 2019

- Worked on developing resource efficient machine learning algorithms which can be deployed on edge devices, specifically for keyword detection in speech and gesture recognition.
- Developed a novel meta learning algorithm which enables RNNs to make rolling predictions. This reduces the amortized computational complexity by an order of 100 and also improves the performance when compared to an RNN trained with a regular training routine.
- Also contributed towards developing resource efficient speech recognition systems, this has been submitted for review at NeurIPS 2019.

Heidelberg Collaboratory of Image Processing, University of Heidelberg

Research Intern, Funded by DAAD WISE Fellowship

Advisor: Prof. Fred Hamprecht

Heidelberg, Germany

May 2018 to July 2018

- Designed a GAN framework for instance segmentation using the Mutex Watershed algorithm.
- Developed a novel smooth auxiliary loss which stabilized the GAN training and improved the performance. This work has been accepted at the **SGO&ML NeurIPS Workshop 2018**.

Video Analytics Lab, Indian Institute of Science

Research Intern

Advisor : Dr. Venkatesh Babu

Bangalore, India

May 2017 to July 2017

- Developed code for Spiking Neural Networks (SNNs) in Theano framework - this is one of the first implementation of SNN in any tensor-based framework.
- Spiking neural networks are biologically plausible neural networks which learn through Spike Time Dependent Plasticity (STDP) - an alternate to gradient descent.

SOFTWARE DEVELOPMENT PROJECT

Fund management software for purchase department, NITK PHP, SQL, HTML

[\[Github\]](#)

- The application is designed to handle the formalities and procedures involved in managing the funds allocated for various projects.
- It is currently being used by the accountants at the purchase department of NITK.

ACADEMIC ACHIEVEMENTS AND AWARDS

- Awarded Huawei Scholarship for Excellence for three consecutive years (2017-2019).
- Awarded the DAAD WISE fellowship to pursue a summer research internship in Germany.
- University Gold Medalist - Information Technology, Batch of 2019.
- Awarded National Talent Search Scholarship by NCERT. A national-level scholarship program in India to identify and recognize students with high intellect and academic talent.
- Qualified Regional Mathematics Olympiad (RMO) - among the thirty students who qualified in the state (Karnataka). RMO is a proof-based mathematics exam, equivalent to the AMC12 and AIME in the US.

PROGRAMMING SKILLS

Deep Learning Frameworks:	TensorFlow, PyTorch, Theano
Languages and Scripts:	C++, C, Python, Java, HTML, CSS, Javascript, MySQL, Bash
Tools:	Android Studio, OpenGL, Flask, Git