Indrajeet Saravanan

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Education

- **The Ohio State University, Columbus, OH** Aug 2017 - May 2019
  Master of Science, Computer Science & Engineering *CGPA* 3.70/4.0
- **National Institute of Technology, Tiruchirappalli, India** July 2013 - May 2017
  Bachelor of Technology, Computer Science & Engineering *CGPA* 7.88/10

Technical Skills

- **Languages**: C++, Python, Java, JavaScript, Bash Scripting
- **Web Technologies & Frameworks**: MySQL, SQLite, Angular.js, Node.js, Express.js, AWS, Docker
- **Methodologies & Tools**: TensorFlow, Matlab, Agile, Git, JIRA, Gradle

Work Experience

Graduate Research Assistant May 2018 - present
The Ohio State University, Columbus, OH

- Implemented an efficient algorithm that uses sprinting policies to maintain cloud Service Level Agreements (SLA)
- Employed Intel Cache Allocation Technology to manage LLC for multiple workloads by creating Class of Services
- Observed an average of 38.89% improvement in runtime for workloads in Rodinia Benchmark suite
- Developed a sprinting model and Chrome extension to improve page load time of web pages
- By performance profiling & characterization experiments, a 3.4% drop in runtime for Alexa Top 500 was detected
- Utilized Python, Bash scripting, Intel RAPL Driver, JavaScript, MySQL, JSON, Unix

Graduate Research Assistant October 2017 - April 2018
The Ohio State University, Columbus, OH

- Developer and Website Administrator of stemc.cse.ohio-state.edu, an interactive learning based web tool that integrates computational thinking with STEM education that is benefiting over 1200 students from 8 schools
- Worked with Ino, a command-line toolkit for programming Arduino boards as an alternative to Codebender
- Utilized Moodle, PHP, MySQL, CentOS, JavaScript, AJAX, jQuery, Bootstrap, HTML, CSS

Summer Research Intern May 2016 - July 2016
Indian Institute of Technology Kharagpur, India

- Implemented an FPGA based architecture for reversible color image watermarking algorithm in YCoCg-R color space
- Incorporated weighted mean based prediction scheme to predict pixel values and embedding of watermark bits achieved by histogram-bin-shifting of prediction errors
- Achieved a 99.24% improvement in the execution time on Nexus 4 DDR Artix-7 FPGA against Matlab simulation

Academic Projects

Device Placement Optimization with Reinforcement Learning Jan 2018 – April 2018

- Implemented an RNN model to efficiently map operations of TensorFlow graphs to devices (CPUs and GPUs)
- Runtime of the sample model (MNIST) executed on the designed model is used as a reward signal to improve mapping signals
- Using Scotch Optimizer, a graph partitioning algorithm as the baseline, a 21.4% improvement in runtime was observed

Autonomous Selfie Drone System Sept 2017 – Dec 2017

- Led a team of four to programme a DJI drone that can search for, recognize owners face and take a burst of pictures
- Used OpenCV (Haar & LBP Classifiers), DLIB for face recognition and employed UCF-CRCV dataset for training
- Achieved 10.45% drop in energy consumption with 2nd best model as baseline and 89.55% accuracy was observed

Publications

- Nathaniel Morris, **Indrajeet S**, Pollyanna Cao, Jerry Ding, and Christopher Stewart. 2018. **SLO Computational Sprinting**. In Proceedings of the ACM Symposium on Cloud Computing (SoCC '18).
- AD Joshi, **Indrajeet S**, N Ramasubramanian, BS Begum. 2017. **Analysis of multi-core cache coherence protocols from energy and performance perspective**. In International Conference on Recent Innovations in Signal Processing and Embedded Systems (RISE '17).
- **Indrajeet S**, S Vollala, BS Begum, N Ramasubramanian. **Evaluation of password encrypted key exchange authentication techniques: A design approach perspective**. In Proceedings of the 1st International Conference on Internet of Things and Machine Learning (IML '17).