Vivek Nair

CONTACT INFORMATION

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EDUCATION

North Carolina State University — Raleigh, NC
Ph.D. candidate in Computer Science — Summer 2013 - Current
Advisor: Dr. Tim Menzies
Current GPA: 3.85/4.0

National Institute of Technology, Durgapur — Durgapur, India
M.Tech in Information Technology — *2011*
GPA: 8.93/10

West Bengal University of Technology — Kolkata, West Bengal
B.Tech in Computer Science — *2009*
GPA: 7.23/10

PROFESSIONAL EXPERIENCE

Research Assistant — North Carolina State University (NCSU)
Real-world Artifical Intelligence for Software Engineering (RAISE) — *January,2015 - present*

- **SWAY: Sampling WAY**
  Exploration of various alternatives to expensive evolutionary searches by intelligent sampling and population explotion.

- **Faster Discovery of Faster Configuration Options**
  Generating predictive models that can be used by optimizers to discover system configurations that closely approach the optimal performance.
  Languages used: Python

Intern — LexisNexis - Risk Solutions
HIS Labs — *June,2016 - Present*

- **Regression Suite:** Implementation of regression suite which includes both validity as well as scaliability. The rig compares the performance scores of ecl-ml and scikit-learn.
  Languages used: ECL, Python
- **ML-Plugins:** Implementation of Machine learning HIPIE plugins. Plugins make the library more accessible. The plugins developed are now a part of the Data Science Portal, an internal tool used across the organization.
  Languages used: DUD, ECL
- **Hyper-Parameter Tuner:** Implemented tuners, which would use algorithms like grid-search, differential evolution etc. to tune the hyperparameters.
  Languages used: ECL

Intern — LexisNexis - Risk Solutions
HIS Labs — *June,2015 - August,2015*

- **Optimizing Random Forests:** Implementation and testing of Random Forest in the Enterprise Control Language (ECL) for use in the High Performance Computing Cluster (HPCC).
  Languages used: ECL, Python

Teaching Assistant — North Carolina State University (NCSU)
Design and Analysis of Algorithm(CSC505) — *January,2014 - December,2014*

- Hold weekly office hours and grading of exams.

Research Assistant North Carolina State University (NCSU)
Group on Autonomy, ResilieNce, Collaboration, and Energy (DANCE) *May,2013 - December,2013*

- **Detecting Contention in Data Center Environment**
  Interference in a data center leads to performance variability, which causes losses to data center operators. Dynamically detecting and mitigating interference would save money for the operators. Use of hardware performance counters have proved useful in our initial experiments.
  Languages used: Python, Shell script
  Various systems used as the testbed: Hadoop, Web service (RUBiS and httpperf)

Software Engineer Samsung Software Engineering Labs, India
File System & Memory Team *June 2011 - May 2013*

- Worked on various projects based on NOR Flash for Ultra Low Cost cell phones.
- Developed tools to write data into One Time Programmable area of the NOR Flash.
- Worked on various filesystems like TargetFFS-NAND, Target-NOR, TargetZFS and Target FAT. Languages used: C

Research Assistant National Institute of Technology, Durgapur
Under Guidance of S. Choudhury *March 2010 - May 2011*

- **An Integrated Routing, Scheduling and Assembly scheme for OBS network**
  Proposed schemes for OBS networks that minimizes the burst loss probability of individual bursts and at the same time achieves the goal of maximization of the minimum unutilized bandwidth of links in Optical Burst Switched networks.
  Languages used: Java, Shell script

Publications

- **Vivek Nair**, Tim Menzies, Jianfeng Chen. *"An (Accidental) Exploration of Alternatives to Evolutionary Algorithms for SBSE"* in SSBSE,2016.
- Subhrabrata Choudhury, **Vivek Nair**, Jaydeep Howlader, Bikash Choudhury and A.K. Mal. *"An integrated routing and offset-time adaptation scheme for OBS network"* in ICDCN,2015.
- Subhrabrata Choudhury, **Vivek Nair**, A.K. Mall. *'A Routing Scheme for OBS Networks"*, in Journal of Optical Communications and Networking(JOCN), 2013.
- Subhrabrata Choudhury, **Vivek Nair**, Bikash Choudhury, Pallab Biswas, A.K. Mall. *'A family of flexible offset-time based wavelength schedulers for OBS edge-nodes"*, in ICP,2012.
- Pallab Biswas, **Vivek Nair**,Soumen Nandi,Soumendra Nath Biswas,Amitav Biswas,Animesh Dutta. *'Session management protocol for virtual classroom in teleteaching"*, in ICCIT, 2010.
- Animesh Dutta, **Vivek Nair**, Ranjan Dasgupta, Swapan Bhattacharya. *"Ontology Based Semi-formal Design of Teleteaching System"*, in TENCON, 2010.
- **Vivek Nair**, Animesh Dutta. *"Ontology based Session Management Protocol for Teleteaching Domain"*. ICCAE, 2010.

Technical Skills

- Language: Python (2+ years), C (6+ years), Java (2+ years), ECL (1 year)
- OS: Linux, Windows
- Version Control: Perforce, git

Honors and Awards

- Awarded the Employee of the Month in the month of January,2012 at Samsung Engineering Lab
- Awarded Scholarship by the HRD Ministry for pursuing M.Tech