

## Vivek Nair

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### CONTACT INFORMATION

3240 EBII, 890 Oval Drive

Raleigh, NC, 27606

Google Scholar: <http://tiny.cc/VivekScholarProfile>

www: <http://www.vivekaxl.com>

Phone: (919) 523-9920

E-mail: [vivekaxl@gmail.com](mailto:vivekaxl@gmail.com)

### EDUCATION

**North Carolina State University**

Ph.D. in Computer Science

Advisor: Dr. Tim Menzies

Raleigh, NC

2018

**National Institute of Technology, Durgapur**

M.Tech in Information Technology

Advisor: Dr. Subhrabrata Choudhury

Durgapur, India

2011

**West Bengal University of Technology**

B.Tech in Computer Science

Kolkata, West Bengal

2009

### PROFESSIONAL EXPERIENCE

**Facebook Inc.**

*Big Data, Analytics, Software Engineering*

Research Scientist

March, 2019 - present

- **Enhancing Developer Productivity.** Leveraging AI/ML to improve developer productivity and efficiency of developer tools. Currently, focused on aiding software developers and on-call engineers to debug faults of a continuous integration pipeline.

**Microsoft Research**

*Telemetry, Big Data, Analytics, C#, Azure Kusto, Azure CosmosDB*

Software Engineering Research Intern

May, 2018 - Aug, 2018

- **Optimizing Distributed Testing Platform.** Optimized the performance (makespan) of Cloud Test, an internal tool used for testing software projects across Microsoft. The optimization strategy uses historical data to general models to predict an optimal schedule for the test jobs. The strategy saved 380 hours in 7 days (3%) and is currently the default scheduling strategy in CloudTest.

**LexisNexis - Risk Solutions**

*Big Data, Usability, FUSE plugins, ECL, Python, Apache Spark*

Intern

June, 2015 - August, 2017

- **Enhanced ML Capabilities of HPCC (a big data cluster)**
  - Developed a FUSE plugin for HPCC to connect with Apache Spark. This plugin decreases data query time (up to 20%) as well as the overhead necessary to download the files to local machines.
  - Implemented an automated testing suite for the ML library and ensured that the testing time was < 24 hours.
  - Developed ML plugins for the Data Science Portal (an internal tool), which required massive refactoring of the codebase.
  - One of the largest contributors to the Machine Learning codebase (addition).

**Samsung Software Engineering Labs, India**

*Performance Analysis, Embedded System, Flash Memory*

Software Engineer

June 2011 - May 2013

- **Developed file-system and memory solutions for cellular phones.** Analyzed data from projects based on NOR Flash for Ultra Low-Cost cell phones, to reduce latency of applications. For example, reduced the boot time of the E1200 from 30 seconds to < 10 seconds.

## PUBLICATIONS

- **Vivek Nair**, Rahul Krishna, Tim Menzies, and Pooyan Jamshidi. *Transfer Learning with Bellwethers to find Good Configurations*. (2019) Submitted
- Chin-Jung Hsu, **Vivek Nair**, Tim Menzies, and Vincent W. Freeh. *Scout: An Experienced Guide to Find the Best Cloud Configuration*. (2019) Submitted
- **Vivek Nair**, Zhe Yu, Tim Menzies, Norbert Siegmund, and Sven Apel. *Finding faster configurations using FLASH*. TSE (2018) → [http://tiny.cc/vivek\\_2018g](http://tiny.cc/vivek_2018g)
- Chin-Jung Hsu, **Vivek Nair**, Vincent W. Freeh, Tim Menzies. *Micky: A Cheaper Alternative for Selecting Cloud Instances*. IEEE CLOUD (2018) → [http://tiny.cc/vivek\\_2018e](http://tiny.cc/vivek_2018e)
- Chin-Jung Hsu, **Vivek Nair**, Vincent W. Freeh, Tim Menzies. *Low-Level Augmented Bayesian Optimization for Finding the Best Cloud VM*. ICDCS (2018) → [http://tiny.cc/vivek\\_2018a](http://tiny.cc/vivek_2018a)
- **Vivek Nair**, Amritanshu Agrawal, Jianfeng Chen, Wei Fu, George Mathew, Tim Menzies, Leandro Minku, Markus Wagner, and Zhe Yu. *Data-Driven Search-based Software Engineering*. MSR (2018). → [http://tiny.cc/vivek\\_2018c](http://tiny.cc/vivek_2018c)
- Jianfeng Chen, **Vivek Nair**, Rahul Krishna, Tim Menzies. *“Sampling” as a Baseline Optimizer for Search-based Software Engineering*. IEEE TSE 2018. → [http://tiny.cc/vivek\\_2016b](http://tiny.cc/vivek_2016b)
- Jianfeng Chen, **Vivek Nair**, Tim Menzies. *Beyond Evolutionary Algorithms for Search-based Software Engineering* in IST 2017. → [http://tiny.cc/vivek\\_2017c](http://tiny.cc/vivek_2017c)
- **Vivek Nair**, Tim Menzies, Norbert Seigmund, Sven Apel. *Using Bad Learners to find Good Configurations* in FSE 2017. → [http://tiny.cc/vivek\\_2017b](http://tiny.cc/vivek_2017b)
- **Vivek Nair**, Tim Menzies, Norbert Seigmund, Sven Apel. *Faster Discovery of Faster System Configurations with Spectral Learning* in ASE Journal 2017. → [http://tiny.cc/vivek\\_2017a](http://tiny.cc/vivek_2017a)
- **Vivek Nair**, Tim Menzies, Jianfeng Chen. *“An (Accidental) Exploration of Alternatives to Evolutionary Algorithms for SBSE”* in SSBSE 2016. → [http://tiny.cc/vivek\\_2016a](http://tiny.cc/vivek_2016a)
- 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. → [http://tiny.cc/vivek\\_2015a](http://tiny.cc/vivek_2015a)
- Subhrabrata Choudhury, **Vivek Nair**, A.K. Mall. *‘A Routing Scheme for OBS Networks’*, in Journal of Optical Communications and Networking(JOCN) 2013.→ [http://tiny.cc/vivek\\_2013a](http://tiny.cc/vivek_2013a)

## TECHNICAL SKILLS

- Language: Python (4+ years), C (6+ years), Java (2+ years), ECL (2 years), C# (3 months)
- Tools: scikit-learn, pandas, numpy, auto-ml
- OS: Linux, Windows
- Version Control: git, Perforce

## HONORS AND AWARDS

- Awarded for innovative use of HPCC Systems, 2017
- Awarded the 2<sup>nd</sup> prize in HPCC System Poster Competition, 2016.
- Awarded the Employee of the Month in January 2012 at Samsung Engineering Lab
- Awarded Scholarship by the HRD Ministry for pursuing M.Tech