

Vivek Nair

CONTACT INFORMATION

Phone: (919) 523-9920
E-mail: vivekaxl@gmail.com
Google Scholar: <http://tiny.cc/VivekScholarProfile>
www: <http://www.vivekaxl.com>

EDUCATION

North Carolina State University Raleigh, NC
Ph.D. in Computer Science 2018
Advisor: Dr. Tim Menzies

National Institute of Technology, Durgapur Durgapur, India
M.Tech in Information Technology 2011
Advisor: Dr. Subhrabrata Choudhury

West Bengal University of Technology Kolkata, West Bengal
B.Tech in Computer Science 2009

PROFESSIONAL EXPERIENCE

Facebook Inc. Research Scientist
Big Data, Analytics, Software Engineering 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 Software Engineering Research Intern
Telemetry, Big Data, Analytics, C#, Azure Kusto, Azure CosmosDB 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 Intern
Big Data, Usability, FUSE plugins, ECL, Python, Apache Spark 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 Software Engineer
Performance Analysis, Embedded System, Flash Memory 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
- 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
- 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
- **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
- 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
- Jianfeng Chen, **Vivek Nair**, Tim Menzies. *Beyond Evolutionary Algorithms for Search-based Software Engineering* in IST 2017. → 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
- **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
- **Vivek Nair**, Tim Menzies, Jianfeng Chen. “An (Accidental) Exploration of Alternatives to Evolutionary Algorithms for SBSE” in SSBSE 2016. → 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
- 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

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 HPC Systems, 2017
- Awarded the 2nd prize in HPC 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