Shrikanth Narayanaswamy Chandrasekaran, Ph.D.

https://snaraya7.github.io/ nc.shrikanth@gmail.com Raleigh, North Carolina, USA

I am Shrikanth a Ph.D**.** (Computer Science) graduate from NC State University. In the last 4.5 years, my Ph.D. research simplified (faster, accurate, and stable) numerous software analytic methods used in some software engineering tasks. Prior to 2017, for close to 10 years I built software products and research prototypes for large enterprises.

EDUCATION

2017 - **Ph.D. Candidate in Computer Science** at North Carolina State University

2004 – 2008: 4 year full-time **Bachelor of Engineering in Electronics and Communication**, Saveetha Engineering College, affiliated to Anna University – Chennai

INDUSTRY EMPLOYMENT HISTORY (2008 - current)

Summer 2021 **Microsoft**, USA
Role: ***Research Intern*** **| Domain**: Software Engineering Research
Developer Satisfaction (productivity): Perform large-scale data analysis on software engineers' feedback about their day-to-day work and on hundreds of software repositories to offer actionable recommendations (through machine learning models) to improve developer satisfaction across a large unit within Microsoft.

Summer 2020 **Fujitsu Laboratories of America**, USA
Role: ***Research Intern*** **| Domain**: Software Engineering Research
Low code platform: Improved deep learning-based 'Code Retrieval' models (using CodeBERT & CodeSearchNet deep learning models) that catalyze developer productivity.

2014 – 2017 **Accenture Labs, India (Full-time)**
Role: Technology R&D Specialist | Domain: Software Engineering Research

- Mentored both interns (on data science tasks) and software developers (for product development).
- Presented the work to leadership on a quarterly basis.
- Research Project #1: Crowdsourcing - Performed large scale data analysis to find obstacles for enterprises to crowdsource software development
- Research Project #2: Log Analysis - Analyzed voluminous incident tickets and their associated log files of a supermarket chain to prescribe solutions to minimize incident resolution time.
- Research Project #3: Requirements Visualization - Built Eclipse IDE plugins for visual requirements and component reuse driven rapid application composition.
- ***Recognized for outstanding contributions (patents and publications)***

2011 – 2014 **ABB India Limited, Bangalore India (Full-time)**
Role: Software Engineer | Software Development, LV Systems R&D | **Domain**: Electrical

- Project #1: Product Development - Managed the software life-cycle of a standalone Low voltage switchgear configuration and reporting product.
- Project #2: Trained a team of software engineers to transition their skills from .NET to Java-based technologies.
- ***Star Employee for a quarter for meeting a short deadline***

2008 – 2011 **Infosys Limited, Chennai India (Full-time)**
Role: Senior Systems Engineer | **Domain**: Banking

- Project #1: Product Finmapper - Single-handedly embedded the entire stack (both front and back-end) of a standalone banking product into an Eclipse IDE environment.

Open Source Contribution : https://youtu.be/34EYSdmBDMs (Speech-Enabled IDE)

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- Integration was done to improve the productivity of senior integration engineers at the client site.
- *Certifications: Sun Certified Java Programmer and Sun Certified Web Component Developer*
- ***Finacle on the spot award for learning a niche skillset and integrating an entire product onto an IDE as a newbie.***

SKILLS

- *Programming*: Java (SCJP and SCWCD certified) & Python. *Fundamentals*: Data Structures, Algorithms, Compilers, Object-oriented analysis, and design.
- *Statistics:* Hypotheses testing, effect size, analysis of distributions, etc
- *Machine Learning:* Predictive/Estimate modeling, Weka data mining, scikit-learn, Deep learning (Tensorflow, CNN & RNN) Carrot2, ELK, and OPEN NLP. *Visualization:* Plotly, MATLAB, R, etc.
- *Front-End*: Java Swing, Eclipse Plugin development, and HTML-CSS. *Database:* RDBMS (MySQL & MariaDB) and Kusto (Microsoft).
- *Distributed computing*: Python multiprocessing on High-Performance computing
- *Operation Systems*: Windows, Unix, and Linux
- Methodologies: Waterfall, Agile and Test-driven development (DevOps tools)

GRANTED PATENTS

1. Method and system for visual requirements and component reuse driven rapid application composition
2. Incident Prediction and Prevention
3. Generating a Test Script Execution Order

RESEARCH (*Research Assistant*, North Carolina State University) 2017 to present

Interest: Software Engineering and Machine Learning | Focus area: Software Quality Assurance | **Lab:** RAISE(http://ai4se.net/) **Advisor:** Dr.Tim Menzies (http://menzies.us/) Our recent empirical study confirms that *"96% of the time, we do not want and we do not need data-hungry methods"* (refer to publication [1] below).

Other research areas: Code Retrieval, Crowdsourcing, Test case prioritization, and Software Maintenance.

PUBLICATIONS

1. **N. C. Shrikanth**, Suvodeep Majumder, and Tim Menzies. Early Life Cycle Software Defect Prediction. Why? How? (To appear in **ICSE** '21).
2. **N. C. Shrikanth**, William Nichols, Fahmid Morshed Fahid, and Tim Menzies. Assessing Practitioner Beliefs about Software Engineering. (To appear in **EMSE** '21 Journal).
3. **N. C. Shrikanth**, and Tim Menzies. 2020. Assessing Practitioner Beliefs about Software Defect Prediction. (**ICSE** '20 SEIP) 🏆 (Best Paper Nominee).
4. Anurag Dwarakanath, **N. C. Shrikanth**, Kumar Abhinav, and Alex Kass. 2016. Trustworthiness in enterprise crowdsourcing: a taxonomy & evidence from data. (**ICSE** '16 SEIP).
5. Anurag Dwarakanath, Upendra Chintala, **Shrikanth N. C**., Gurdeep Virdi, Alex Kass, Anitha Chandran, Shubhashis Sengupta, and Sanjoy Paul. 2015. CrowdBuild: a methodology for enterprise software development using crowdsourcing (CSI-SE **ICSE** '15).
6. Mehdi Bahrami, **N.C. Shrikanth**, Yuji Mizobuchi, Lei Liu, Masahiro Fukuyori, Wei-Peng Chen, Kazuki Munakata. 2021. AugmentedCode: Examining the Effects of Natural Language Resources in Code Retrieval Models (Under Review).
7. Mehdi Bahrami, **N.C. Shrikanth**, Shade Ruangwan, Lei Liu, Yuji Mizobuchi, Masahiro Fukuyori, Wei-Peng Chen, Kazuki Munakata, and Tim Menzies. 2021. PyTorrent: A Python Library Corpus for Large-scale Language Models (Under Review).

Open Source Contribution : https://youtu.be/34EYSdmBDMs (Speech-Enabled IDE)

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TEACHING ASSISTANT

1. CSC 440 **Database Management Systems** - Instructor: Dr. Rada Chirkova
2. CSC 495 **Software Testing** - Instructor: Dr. Kathryn T. Stolee
3. CSC 510 **Software Engineering** - Instructors: Dr. Jamie Jennings, Dr. Nicholas A. Kraft, and Dr. Emerson Murphy-Hill

REVIEWER

- ★ Empirical Software Engineering Journal
- ★ Information and Software Technology Journal

TALKS

- ❖ ICSE'21 - Early Life Cycle Software Defect Prediction. Why? How? https://youtu.be/oHCUJnWygDk
- ❖ ICSE'20 - Assessing Practitioner Beliefs about Software Defect Prediction https://youtu.be/UokXMoP-v7Q?t=2094
- ❖ ICSE'20 - What Disconnects Practitioner Belief and Empirical Evidence https://youtu.be/UbuG6UwVzuU

Open Source Contribution : https://youtu.be/34EYSdmBDMs (Speech-Enabled IDE)