Shrikanth Narayanaswamy Chandrasekaran, Ph.D.

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I am Shrikanth a Ph.D. (Computer Science) graduate from NC State University. In the last 4 years, my research simplifies numerous machine learning methods used in some software engineering tasks. Prior to 2017, I worked in the software engineering space for close to **10 years.**

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)