Nuthan Munaiah

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Education

Ph.D. 2019 (Expected), Computing and Information Sciences, Rochester Institute of Technology
Advisor: Dr. Andrew Meneely. GPA: 4.0.

B.E. 2009, Computer Science and Engineering, Visveswaraiah Technological University, Karnataka, India

Research Experience

2014-Present Graduate Research Assistant, Rochester Institute of Technology

- Leading a research project in which Natural Language Processing (NLP) is applied to characterize developers' conversations in the context of modern code review.
- Leading an effort to evaluate the effectiveness of a commonly used measure of security vulnerability severity—the Common Vulnerability Scoring System (CVSS).
- Developed a tool—`reaper`—that is capable of classifying a GitHub repository as containing an engineered software project or otherwise.
- Developed fine-grained attack surface metrics that enable the proactive assessment of security risk throughout the development lifecycle of a software system.

Publications

Journal Articles

J.1 **Nuthan Munaiah**, Felivel Camilo, Wesley Wigham, Andrew Meneely, and Meiyappan Nagappan. 2016. Do bugs foreshadow vulnerabilities? An in-depth study of the chromium project. Empirical Software Engineering: 1305–1347. http://doi.org/10.1007/s10664-016-9447-3

J.2 **Nuthan Munaiah**, Steven Kroh, Craig Cabrey, and Meiyappan Nagappan. 2017. Curating GitHub for Engineered Software Projects. Empirical Software Engineering: 3219–3253. http://doi.org/10.1007/s10664-017-9512-6

Conference Papers

C.1 **Nuthan Munaiah**, Benjamin S. Meyers, Cecilia O. Alm, Andrew Meneely, Pradeep K. Murukannaiah, Emily Prud'hommeaux, Josephine Wolff and Yang Yu. Natural Language Insights from Code Reviews that Missed a Vulnerability: A Large Scale Study of Chromium. In Proceedings of the 9th International Symposium on Engineering Secure Software and Systems (ESSoS 2017). Springer International Publishing, Cham, 70-86. DOI: https://doi.org/10.1007/978-3-319-62105-0_5

C.2 **Nuthan Munaiah**, Andrew Meneely and Pradeep K. Murukannaiah. 2017. A Domain-Independent Model for Identifying Security Requirements. In Proceedings of the 25th International Requirements Engineering Conference (RE 2017), IEEE, 506-511. DOI: https://doi.org/10.1109/RE.2017.79

C.3 Krutz, Daniel E., **Munaiah, Nuthan**, Peruma, Anthony and Mkaouer, Mohamed Wiem. 2017. Who Added That Permission to My App?: An Analysis of Developer Permission Changes in Open Source Android Apps. In Proceedings of 4th International Conference on Mobile Software Engineering and Systems (MOBILESoft '17). ACM, New York, NY, USA, 165-169. DOI: https://doi.org/10.1109/MOBILESoft.2017.5

Workshop Papers

W.1 **Nuthan Munaiah** and Andrew Meneely. 2016. Beyond the Attack Surface: Assessing Security Risk with Random Walks on Call Graphs. In Proceedings of the 2016 ACM Workshop on Software PROtection (SPRO '16). ACM, New York, NY, USA, 3-14. DOI: https://doi.org/10.1145/2995306.2995311

W.2 **Nuthan Munaiah** and Andrew Meneely. 2016. Vulnerability Severity Scoring and Bounties: Why the Disconnect?. In Proceedings of the 2nd International Workshop on Software Analytics (SWAN 2016). ACM, New York, NY, USA, 8-14. DOI: https://doi.org/10.1145/2989238.2989239

W.3 Iván Tactuk Mercado, **Nuthan Munaiah**, and Andrew Meneely. 2016. The Impact of Cross-platform Development Approaches for Mobile Applications from the User's Perspective. In Proceedings of the International Workshop on App Market Analytics (WAMA 2016). ACM, New York, NY, USA, 43-49. DOI: https://doi.org/10.1145/2993259.2993268

W.4 Daniel E. Krutz, **Nuthan Munaiah**, Andrew Meneely, and Samuel Malachowsky. 2016. Examining the Relationship between Security Metrics and User Ratings of Mobile Apps: A Case Study. In Proceedings of the International Workshop on App Market Analytics (WAMA 2016). ACM, New York, NY, USA, 8-14. DOI: https://doi.org/10.1145/2993259.2993260

W.5 **Nuthan Munaiah**, Casey Klimkowsky, Shannon McRae, Adam Blaine, Samuel Malachowsky, Cesar Perez, and Daniel E. Krutz. 2016. Darwin: A Static Analysis Dataset of Malicious and Benign Android Apps. In Proceedings of the International Workshop on App Market Analytics (WAMA 2016). ACM, New York, NY, USA, 26-29. DOI: https://doi.org/10.1145/2993259.2993264

Development Experience

2009-2014 Software Engineer, Infosys Limited, India

- Developed several web applications for internal stakeholders and customers of Citizens Bank.
- Ensured business continuity by implementing a time-sensitive fix to citizensbank.com when legacy MapQuest services were deprecated.
- Developed a RESTful service to periodically check the sanity of response from CashEdge services. The service helped improve time-to-market of a business critical application that used CashEdge services.

2008–2009 Technical Support Intern, Microsoft Global Technical Support Center, India

- Trained on the deployment and administration of Windows Server 2003 based Active Directory infrastructure, SQL Server 2008, and Exchange Server 2003.

Technical Skills

Languages Python, R, Visual C#

Frameworks Django, ASP.NET, WCF

Databases PostgreSQL, SQLite, SQL Server, Oracle

Community Service

- Co-reviewer for the 9th International Symposium on Engineering Secure Software and Systems (ESSoS) conference.
- Co-reviewer for the Journal of Systems and Software.
- Student volunteer at the 38^{th} International Conference on Software Engineering, Austin, TX, USA.
- Student volunteer at the 24^{th} International Symposium on the Foundations of Software Engineering, Seattle, WA, USA.

Achievements

- Awarded the quarterly best performer award in the first quarter of employment at Infosys Limited.
- Awarded the first place at the Adobe Flex Boot Camp 2008.