Dr. Ed Novak

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Professional Experience

Associate Professor of Computer Science - Franklin and Marshall College, 2016 - present
Department Chair Fa'22 - present

Freelance Developer 2010 - present
Web, Android, iOS, Raspberry Pi

Graduate Student Researcher and Teaching Assistant - The College of William and Mary, 2010 - 2016

Education

Ph.D. Computer Science, mentored by Dr. Qun Li, at the College of William and Mary, August of 2016.

M.S. Computer Science, College of William and Mary, May of 2012.

B.A. Computer Science and Math *(double major)*, Monmouth College, May of 2010.

Research Interests

My research area is in security and privacy on smart mobile devices. Recently I've become interested in computer science education research.

Publications

To Appear...
Ed Novak, Shaamyl Anwar, Saad Mahboob, Shokhinabonu Tojieva, and Chelsea Rao "*Stigma: A Tool for Modifying Closed-Source Android Applications*." Recently accepted at CCSC Eastern 2024.

To Appear...
Lamprecht, R., Novak, E., & Kisner, E. (2024). "*Categorizing Assignments in Online Repositories.*" In Proceedings of ILSET 2024–International Conference on Life Sciences, Engineering and Technology, San Francisco, CA, USA. ISTES Organization.

[1] E. Novak, "A worked example model for teaching dynamic programming," in *Proceedings of the 54th ACM Technical Symposium on Computer Science Education V. 2*, ser. SIGCSE 2023, Toronto ON, Canada: Association for Computing Machinery, 2023, p. 1286, ISBN: 9781450394338. DOI: 10.1145/3545947.3576232. [Online]. Available: https://doi.org/10.1145/3545947.3576232.

[2] E. Novak and O. Peter, *Oral exams in cs-education: Pros and cons in the age of ai assisted programming*, Available At: https://ednovak.net/documents/novak_ohmann_ccsc_eastern_2023_oral_exams_cs_paper.pdf, Lightning Talk at CCSC Eastern, 2023.

[3] P. Ohmann, E. Novak, S. Reckinger, and S. Reckinger, "Have you tried oral exams in your cs class?" In *Proceedings of the 54th ACM Technical Symposium on Computer Science Education V. 2*, ser. SIGCSE 2023, Toronto ON, Canada: Association for Computing Machinery, 2023, p. 1250, ISBN: 9781450394338. DOI: 10.1145/3545947.3573347. [Online]. Available: https://doi.org/10.1145/3545947.3573347.

[4] D. G. Graham, *Ethical Hacking: A Hands-on Introduction to Breaking In*. No Starch Press, 2021, Technical Editor, ISBN: 9781718501874.

[5] D. Hou, H. Han, and E. Novak, "Taes: Two-factor authentication with end-to-end security against voip phishing," in *2020 IEEE/ACM Symposium on Edge Computing (SEC)*, 2020, pp. 340–345. DOI: 10.1109/SEC50012.2020.00049.

[6] E. Novak, P. T. Aung*, and T. Do*, "Vpn+ towards detection and remediation of information leakage on smartphones," in *2020 21st IEEE International Conference on Mobile Data Management (MDM)*, ***F&M Student Collaborator***, 2020, pp. 39–48. DOI: 10.1109/MDM48529.2020.00025.

[7] I. Walk, A. Yim, E. Novak, C. Reiss, and D. Graham, "Redesigning the online video lecture player to promote active learning," in *2020 IEEE Frontiers in Education Conference (FIE)*, 2020, pp. 1–5. DOI: 10.1109/FIE44824.2020.9273898.

[8] E. Novak and C. Marchini*, "Android app update timing: A measurement study," in *2019 20th IEEE International Conference on Mobile Data Management (MDM)*, ***F&M Student Collaborator***, 2019, pp. 551–556. DOI: 10.1109/MDM.2019.00118.

[9] E. Novak, Z. Tang*, and Q. Li, "Ultrasound proximity networking on smart mobile devices for iot applications," *IEEE Internet of Things Journal*, vol. 6, no. 1, pp. 399–409, 2019, ***F&M Student Collaborator***. DOI: 10.1109/JIOT.2018.2848099.

[10] Y. Yin, Q. Li, L. Xie, S. Yi, E. Novak, and S. Lu, "Camk: Camera-based keystroke detection and localization for small mobile devices," *IEEE Transactions on Mobile Computing*, vol. 17, no. 10, pp. 2236–2251, 2018. DOI: 10.1109/TMC.2018.2798635.

[11] N. Carter, C. Li, Q. Li, *et al.*, "Graphical passwords for older computer users," in *Proceedings of the Fifth ACM/IEEE Workshop on Hot Topics in Web Systems and Technologies*, ser. HotWeb '17, San Jose, California: Association for Computing Machinery, 2017, ISBN: 9781450355278. DOI: 10.1145/3132465.3132472. [Online]. Available: https://doi.org/10.1145/3132465.3132472.

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[18] S. Yi, Z. Qin, E. Novak, Y. Yin, and Q. Li, "Glassgesture: Exploring head gesture interface of smart glasses," in *IEEE INFOCOM 2016 - The 35th Annual IEEE International Conference on Computer Communications*, 2016, pp. 1–9. DOI: 10.1109/INFOCOM.2016.7524542.

[19] Z. Hao, Y. Tang, Y. Zhang, E. Novak, N. Carter, and Q. Li, "Smoc: A secure mobile cloud computing platform," in *2015 IEEE Conference on Computer Communications (INFOCOM)*, 2015, pp. 2668–2676. DOI: 10.1109/INFOCOM.2015.7218658.

[20] E. Novak, Y. Tang, Z. Hao, Q. Li, and Y. Zhang, "Physical media covert channels on smart mobile devices," in *Proceedings of the 2015 ACM International Joint Conference on Pervasive and Ubiquitous Computing*, ser. UbiComp '15, Osaka, Japan: Association for Computing Machinery, 2015, pp. 367–378, ISBN: 9781450335744. DOI: 10.1145/2750858.2804253. [Online]. Available: https://doi.org/10.1145/2750858.2804253.

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[22] E. Novak and Q. Li, "A survey of security and privacy in online social networks," The College of William and Mary, Tech. Rep. WM-CS-2012, 2012.

Courses Taught

CPS-222 (Computer Science III)
Advanced data structures and algorithms, taught in C++. The third course in the introductory computer science sequence.

CPS-242 (Computer Organization)
Data representation, digital circuits, digital logic gates, and assembly programming

CPS-340 (Mobile Application Development)
Modern software engineering for the Android platfrom. Java.

CPS-342 (Operating Systems)
Processes, virtual memory, filesystems, device drivers. Taught in C using xv6

CPS-111 (Computer Science I)
Introduction to computational thinking and problem solving. Programming in python.

CPS-112 (Computer Science II)
Data structures and algorithms, taught in Java. The second course in the introductory computer science sequence.

CPS-261 (Algorithms)
Traditional undergraduate algorithms course.

Awards

S. Laurie Sanderson Award for Excellence in Undergraduate Mentoring
for my work with undergraduate Alessandro Roux in 2014.

Arts & Sciences OGSR/Graduate Student Association Conference Funds 2015, College of W&M.

Honorable Mention for Best Paper
at Ubicomp 2015.

Honorable Mention for Excellence in Scholarship in the Natural and Computational Sciences
at the W&M Graduate Research Symposium 2015.

Technical Skills

Tools: Git/GitHub, LaTeX, GIMP, Matplotlib, Matlab.

Programming Languages: java, python, javascript, C, C++, matlab/octave, full stack web development, bash, assembly (smali, RISC-V, X86).

Activities and Side Projects

Open source contributer to "Logisim-Evolution"
`https://github.com/logisim-evolution/logisim-evolution`

Volunteer at the Lancaster Science Factory Summer 2024.

Lifelong swimmer and water polo player. Co-Founder of Monmouth College Water Polo Club, 2007. Club president W&M water polo from 2012 - 2016. Faculty advisor for F&M water polo 2016 - 2020.

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