

# VITALY FORD

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## OBJECTIVE

Discover Innovation → Deliver Success

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## EDUCATION

**Tennessee Tech University** – Cookeville, TN  
*Ph.D. in Engineering*, Computer Science, Cybersecurity, May 2017.  
GPA: 4.0  
**Tennessee Tech University** – Cookeville, TN  
*Masters in Computer Science*. August 2015.  
GPA: 4.0  
**Ural Federal University** – Yekaterinburg, Russia  
*Information Systems and Technologies Engineer*. Sep 2007 – Jun 2012.  
GPA: 5.0

## EXPERIENCE

**Assistant Professor, Computer Science** (<https://www.arcadia.edu/profile/vitaly-ford>)  
Arcadia University, Glenside, PA. **August 2017 – Present.**  
Courses taught:  

1. Computer Organization and Architecture
2. Data Structures and Algorithm Analysis
3. Operating Systems
4. Network Security
5. Capstone
6. Penetration Testing / Practical Security Assessment
7. Co-teaching CS201 Programming I at Jiangsu University: October 2018 – January 2019

  
**Administrative Experience, Faculty Committees, Service**  
Arcadia University, Glenside, PA.  

1. Member, Provost Search Committee (fall 2018 – spring 2019).
2. Member, Faculty Advisory Committee for the Office of the President: worked on development of strategies to move Arcadia forward, vision review (fall 2018 – spring 2019).
3. Member, Self-Study Evaluation Team for the Computer Science and Math Department (fall 2018).
4. Member, Outreach Committee for the Computer Science and Math Department (fall 2017 – Present)

  
**WiCyS Coordinator for the Chapter Development, Women in Cybersecurity**  
Worked on chapter development, WiCyS policies and bylaws, outreach. **January 2018 – Present.**  
**Director of Chapter Development, National Cybersecurity Students Association**  
Worked on chapter development, strategic plan, association policies, web development, blog posts, webcasts, outreach and education resource management. **June 2016 – Present.**  
**Instructor of Record**  
Taught Principles of Computing course, 2 sections. Fall 2016.  
Taught OO Programming, Introduction to Penetration Testing courses. Spring 2017.  
**Graduate Research Assistant**  
Security of the Cyber-Physical Systems, Cybersecurity Education Research and Outreach Center, Tennessee Tech University (TTU). Center for Energy Systems Research.  
**January 2013 – May 2017.**  
**GenCyber Cybersecurity Lead Instructor**  
Developed curriculum and taught K-12 students and teachers at GenCyber Camp, TTU.  
January – August 2016, January – August 2017.  
**Vice President & Founding Member**  
Led and managed the CyberEagles Cybersecurity club at TTU. Developed a Mentor Internship Program, resources, training seminars, social activities, and organized conference trips. August 2013 – August 2016.

**Web-programmer**

Analyzed the requirements and developed websites for the CyberEagles Cybersecurity Club and Engineering Joint Council, TTU. Spring 2014 – Spring 2016.

**Teaching Assistant**

Tutored students and managed labs (C++) at CS Department, TTU. Fall 2012.

**IT support for the Engineering Department**

Computer Science Department, TTU. Fall 2012.

**Technician, Software Developer**

Laboratory of Distant Monitoring Methods, Yekaterinburg, Russia. Ural Federal University. October 2009 – May 2012.

Was responsible for designing and developing the following software/hardware products according to the set requirements:

- A compact computer vision system for precise (error: 0.2 mm) measuring the distance between rolls of a continuous casting machine.
- A computer vision system for measuring 3D coordinates of moving objects.
- An accurate semi-automatic calibration technique for the above-mentioned systems.

**RESEARCH  
PROFILE**

Smart grid security, smart meter security, consumer data privacy, fraud detection, smart meter data analysis, machine learning, cybersecurity education.

Publications (can be accessed at <http://vford.me/publications>)

- A. Tarasyev, V. Ford, V. Turygina, and A. Dolganov, “Optimization of Information Resources in The Industrial Ecology”, in *Proceedings of the 17th IFAC Workshop on Control Applications of Optimization*, Yekaterinburg, Russia, October 15-19, 2018.
- I. Sachkov, A. Dolganov, V. Ford, and V. Turygina, “The Features of the Presentation of the Topic “Synergism of the Economics” For Students of Information Technologies”, in *Proceedings of the 17th IFAC Workshop on Control Applications of Optimization*, Yekaterinburg, Russia, October 15-19, 2018.
- V. Ford, D. Tyler, and A. Siraj, “AMIsim: Application-layer Advanced Metering Infrastructure Simulation Framework for Secure Communication Protocol Performance Evaluation”, in *Proceedings of the 11th USENIX Workshop on Cyber Security Experimentation and Test*, August 13, 2018.
- K. Rabieh, M. Pan, Z. Han, and V. Ford, “SRPV: A Scalable Revocation Scheme for Pseudonyms-based Vehicular Ad Hoc Networks”, in *Proceedings of the IEEE ICC 2018 Communication and Information Systems Security Symposium*, May 2018.
- V. Ford, A. Siraj, A. Haynes, and E. L. Brown, “Capture the Flag Unplugged: An Offline Cyber Competition”, in *Proceedings of the ACM SIGCSE (Rank A)*, March 8-11, 2017.
- V. Ford, A. Siraj, and M. A. Rahman, “Secure and Efficient Protection of Consumer Privacy in Advanced Metering Infrastructure Supporting Fine-grained Data Analysis”, *Journal of Computer and System Sciences (Rank A\*)*, 83.1 (2017): 84-100.
- V. Ford and A. Siraj, “POSTER: Reliable and efficient protection of consumer privacy in Advanced Metering Infrastructure”, Institute for Computer Sciences, Social Informatics and Telecomm. Engineering: SecureComm 2015, LNICST 164, pp. 563–566, 2015.
- C. Cody, V. Ford, and A. Siraj, “Decision Tree Learning for Fraud Detection in Consumer Energy Consumption”, in *Proceedings of the 14<sup>th</sup> IEEE International Conference on Machine Learning and Applications*, December 9-11, 2015.
- V. Ford, A. Siraj, and W. Eberle, “Smart Grid Energy Fraud Detection Using Artificial Neural Networks”, in *Proceedings of the 2014 IEEE Symposium Series on Computational Intelligence*, December 9-12, 2014.
- V. Ford and A. Siraj, “Applications of Machine Learning in Cyber Security”, in *Proceedings of the 27<sup>th</sup> International Conference on Computer Applications in Industry and Engineering*, October 13-15, 2014.
- V. Ford and A. Siraj, “Clustering of smart meter data for disaggregation”, in *Proceedings of IEEE Global Conference on Signal and Information Processing*, December 3-5, 2013.
- NSA/NSF GenCyber Subaward Recipient, PI, Development of GenCyberCoin, May 2019 – May 2020, \$27,280.
- Arcadia University ITC Grant, “Advancing Curriculum with Visual Technological Innovations”, Project Director, funding: \$2,760.66. November 2018.

**GRANT  
ACTIVITY**

	<ul style="list-style-type: none"> <li>• NSF CC* Network Design, Co-PI, Award Id: 1827050, July 2018 – July 2020, \$352,500.</li> <li>• NSA/NSF GenCyber Subaward Recipient, PI, Development of GenCyberCoin, April 2018 – April 2019, \$16,370.</li> <li>• Arcadia University Summer Camp Grant, “Artificial Intelligence: Exploring a Smart World”, Project Director, funding: \$9,000.00. December 2017.</li> <li>• Arcadia University ITC Grant, “Obtaining State-of-the-Art Tech Equipment for Curriculum Enrichment”, Project Director, funding: \$3,734.00. November 2017.</li> <li>• Travel grants for attending Special Interest Group on Computer Science Education (SIGCSE) workshop, CISSE The Colloquium, CTSC cyberinfrastructure. 2016.</li> <li>• Helped to write research proposals for NSF. Spring 2014, Fall 2015, Summer 2016.</li> <li>• Trustworthy Cyber Infrastructure for the Power Grid (TCIPG) Summer School Scholarship, June 2013.</li> <li>• Trusted Infrastructure Workshop Scholarship, the PSU. June 2013.</li> </ul>
<b>PROFESSIONAL DEVELOPMENT</b>	<ul style="list-style-type: none"> <li>• NSF CC* and CICI PI Workshop participant, September 24-26, 2018.</li> <li>• GenCyber Fall Meeting presentation on GenCyberCoin project, September 20-21, 2018.</li> <li>• Lightning talk at Women in Cybersecurity Conference, March 2018.</li> <li>• New Educators Workshop at ACM SIGCSE, February 2018.</li> <li>• Collaborating on Curriculum Development Workshop at Arcadia University, Jan. 2018.</li> </ul>
<b>HONORS</b>	<ul style="list-style-type: none"> <li>• Research Poster Co-Winner, 1<sup>st</sup> National Women in Cyber Security Conference. <i>Statistical Analysis for Fraud Detection in Smart Meters</i>. April 2014.</li> <li>• Best Ph.D. Research Paper Award, Tennessee Tech University, April 2014.</li> <li>• Research Day Poster Winner, Tennessee Tech University, April 2013, April 2015.</li> <li>• Research Poster Winner, Ural Federal University, April 2011.</li> <li>• Winner of the “Youth Scientific-Innovation Contest”, Yekaterinburg, Russia, Oct. 2011.</li> </ul>
<b>COMPETITIONS</b>	<ul style="list-style-type: none"> <li>• Capture The Flag participant, 2014-2017: NCL, CSAW, CONFidence, NotSoSecure.</li> <li>• Participated as one of the top 8 teams in the southeast region in the Southeast Collegiate Cyber Defense Competition, 2014-2015. Was responsible for training the team, Incident Response, Maintaining Ecommerce and Web services, Linux administration.</li> <li>• National Cyber League 2013. First place in the 1<sup>st</sup> individual game, Silver Bracket. Third place in the team game, Silver Bracket.</li> <li>• Symantec Cyber Readiness Challenge, ISSA, October 2013.</li> </ul>
<b>VOLUNTEER ACTIVITY</b>	<ul style="list-style-type: none"> <li>• Community College Cyber Summit (3CS), lead volunteer, Summer 2016, 2017.</li> <li>• Women in Cybersecurity Conference, member of the organizing committee, 2014 – 17.</li> <li>• ISSA InfoSec international conference volunteer, Fall 2013, Fall 2015.</li> <li>• NCWIT Aspirations in Computing Award, Spring 2013, Spring 2014.</li> <li>• STEM programming activities for middle school students volunteer, Spring 2014.</li> <li>• South-East Women in Computing conference volunteer, Fall 2013.</li> <li>• ACM programming contest volunteer, Fall 2012, Fall 2013, Fall 2014, Fall 2015.</li> <li>• High School award ceremony volunteer, Spring 2013.</li> </ul>
<b>OTHER EXPERIENCE</b>	<ul style="list-style-type: none"> <li>• KINBERCON 2019, speaker at two sessions: “Advancing Campus Cyberinfrastructure in PA: Updates of Funded NSF CC* Project Activities” and “Determining Technology Requirements for Scientific Innovation”.</li> <li>• The National Women in Cybersecurity Conference 2019: Committee Member, Workshop presenter (“Pittsburgh CTF: Steal the Steel”), Lightning Talk (“You Can Do It! The Power of the Cybersecurity Sisterhood”), session presenter (“WiCyS Student Chapter Meetup: Sharing of Experiences”).</li> <li>• Grant proposal reviewer: “New University Researchers Start up Program”, Quebec, Canada. January 2018.</li> <li>• Workshop presenter at the National Women in Cybersecurity Conference 2017: <i>Business Acumen</i>, Tucson, AZ.</li> <li>• Invited Center of Academic Excellence Tech Talk on Consumer Privacy vs Data Mining: Issues with Smart Meter Data, January 26, 2017.</li> <li>• Invited seminar speaker at Rochester Institute of Technology: <i>Privacy- and Data-Aware</i></li> </ul>

*Smart Grid Communication*, October 18, 2016.

- Workshop presenter at the National Women in Cybersecurity Conference 2016: *Cybersecurity Club 101: From Inception to Installment and Beyond*, Dallas, TX.
- Program Committee Member: ACM SafeConfig automated decisions for active cyber defense, July 2015; Journal of Supercomputing, June 2016; IEEE ISI, July 2016; IEEE Transactions on Industrial Informatics, February 2017; LCN, May 2017; ASE USENIX, June 2017; SIGCSE, September 2017.
- Guest Lecture Speaker: Information Assurance and Security at Tech. Spring 2014, 2016.
- Invited “Lightning Talk”: *Applying Machine Learning for Smart Meter Data Profiling*, TCIPG Summer School, Q Center – St. Charles, IL. June 20, 2013.

## **LANGUAGES**

Native Russian, fluent written and verbal English.

## **TECHNICAL SKILLS**

Metasploit, BurpSuite, Wireshark, Nmap, SQLmap, W3af, OpenVAS, ZAP, Nessus, Visual Studio, Django, Omnet++, C/C++/C#, Python, Java, .Net, HTML, CSS, JavaScript, PHP, MySQL, AWS, XML, PostgreSQL.