Curriculum Vitae

Yen-Hung (Frank) Hu, D.Sc.
Professor
Department of Computer Science
Norfolk State University
Norfolk, Virginia, 23504

EDUCATION

- 1999 - 2004: Doctor of Science (D.Sc.) in Computer Science, The George Washington University, Washington DC.
- 1997 - 1999: M.S. in Computer Science, Southeastern University, Washington DC.
- 1989 - 1991: M.S. in Applied Chemistry, National Chiao-Tung University, Taiwan.
- 1985 - 1989: B.S. in Chemistry, National Sun Yat-Sen University, Taiwan.

ACADEMIC EXPERIENCE

- December 2020 – Present: Professor of Computer Science at Norfolk State University.
- June 2020 – Present: Fellow of the Commonwealth Cyber Initiative (CCI)
- August 2015 – June 2021: B.S. ITE Program Coordinator at Norfolk State University.
- August 2015 – May 2019: Faculty Senate at Norfolk State University.
- August 2014 – December 2020: Associate Professor of Computer Science at Norfolk State University.
- January 2013 – June 2014: PI of the CyberCorps: SFS Hampton University Graduate Education and Training Scholarships in Information Assurance (HU GETS-IA) Program.
- January 2011 – May 2014: Director of the Information Assurance Center at Hampton University (IAC@HU).
- January 2005 – May 2014: Assistant/Associate Professor of Computer Science at Hampton University.

PUBLICATION (2015 – Present)

- Yen-Hung Hu, "A Study on the Challenges of Building a Trustworthy Network", in Proceeding of Virginia Academy of Science (VAS) 2015 Annual Meeting, May 21-23, 2015, James Madison University, Harrisburg, Virginia, USA. (Conference Abstract)
- Yen-Hung Hu, "A Visualization Tool for Monitoring, Predicting and Mitigating Network Intrusions", in Proceeding of Virginia Academy of Science (VAS) 2015 Annual Meeting, May 21-23, 2015, James Madison University, Harrisburg, Virginia, USA. (Conference Abstract)
- Yen-Hung Hu, "Development of a Dynamical Systems Approach to Monitor Network Activities," 2015 CISSE, June 14-18, 2015, Las Vegas, Nevada, USA. (Conference Poster - The best research poster award)
- Yen-Hung Hu, "Using Open Source Vulnerability Analysis Tools To Assess Coding Security And Quality", in Proceeding of Virginia Academy of Science (VAS) 2016 Annual Meeting, May 18-20, 2016, University of Mary Washington, Fredericksburg, Virginia, USA. (Conference Abstract)
- Yen-Hung Hu, "Dynamical System Modeling", in Proceeding of Virginia Academy of Science (VAS) 2016 Annual Meeting, May 18-20, 2016, University of Mary Washington, Fredericksburg, Virginia, USA. (Conference Abstract)

- Shawniece L. Parker and Yen-Hung Hu, "Content Mining Techniques for Detecting Cyberbullying in Social Media", Virginia Journal of Science, Vol. 67 (2016), No. 3. (Journal Paper)
- Yen-Hung Hu and Thomas Kofi Annan, "Assessing Java Coding Vulnerabilities in Undergraduate Software Engineering Education by Using Open Source Vulnerability Analysis Tools," Journal of the Colloquium for Information System Security Education. Vol 4, No 2 (2016). (Journal Paper)
- Yen-Hung Hu and Shawniece L. Parker, "Big Data Content Mining Techniques for Detecting Cyberbullying in Social Media", in Proceeding of Virginia Academy of Science (VAS) 2017 Annual Meeting, May 17-19, 2017, Virginia Commonwealth University, Richmond, Virginia, USA. (Conference Abstract)
- Yen-Hung Hu and Thomas Kofi Annan, "Review of secured mobile application development process in the industry", in Proceeding of Virginia Academy of Science (VAS) 2017 Annual Meeting, May 17-19, 2017, Virginia Commonwealth University, Richmond, Virginia, USA. (Conference Abstract)
- Abdinur Ali, Yen-Hung Hu, Chung-Chu (George) Hsieh, Mushtaq Khan, "A Comparative Study on Machine Learning Algorithms for Network Defense", Virginia Journal of Science: Vol. 68, No. 3, Article 1, 2017. (Journal Paper)
- Leah Winkfield, Yen-Hung Hu, Mary Ann Hoppa, "A Study of the Evolution of Secure Software Development Architectures," in Conference Program of the CISSE 2018, June 9-13, 2018, New Orleans, Louisiana, USA. (Conference Abstract)
- Leah Winkfield, Yen-Hung Hu, Mary Ann Hoppa, "A Study of the Evolution of Secure Software Development Architectures," Journal of the Colloquium for Information System Security Education. Vol 6, No 1 (2018). (Journal Paper)
- Abdinur Ali, Yen-Hung Hu, Cheryl Hinds, Jonathan Graham, Chung-Chu (George) Hsieh "Diffusion Metrics of the AES Symmetric Cryptosystem," in Conference Program of CISSE 2018, June 9-13, 2018, New Orleans, Louisiana, USA. (Conference Abstract)
- Abdinur Ali, Yen-Hung Hu, Cheryl Hinds, Jonathan Graham, Chung-Chu (George) Hsieh "Diffusion Metrics of the AES Symmetric Cryptosystem", in Proceeding of FCS'18, July 30 - August 2, 2018, Las Vega, Nevada, USA. (Conference Paper)
- Abdinur Ali, Yen-Hung Hu, Chung-Chu (George) Hsieh, Mushtaq Khan, "Detailed Analysis of Network Attack Detection Accuracy Using Machine Learning Algorithms", in Proceeding of ICAI'18, July 30 – August 2, 2018, Las Vega, Nevada, USA. (Conference Paper)
- Yen-Hung Hu, Nathan Mensah, Mary A. Hoppa, "A Case Study of BYOD Security Platforms Assessment", in Proceeding of Virginia Academy of Science (VAS) 2018 annual VAS Meeting, May 23-25, 2018, Longwood University, Farmville, Virginia, USA. (Conference Abstract)
- Yen-Hung Hu, Leah Winkfield, Mary A. Hoppa, "A Case Study of Securing Modern Application Architectures", in Proceeding of Virginia Academy of Science (VAS) 2018 annual VAS Meeting, May 23-25, 2018, Longwood University, Farmville, Virginia, USA. (Conference Abstract)
- Yen-Hung Hu, Abdinur Ali, Chung-Chu Hsieh, Aurelia Williams, "Machine Learning Techniques for Classifying Malicious API Calls and N-Grams in Kaggle Dataset", In Proceeding of 2019 IEEE SoutheastCon, April 11-14, 2019, Huntsville, Alabama, USA. (Conference Paper)
- Yen-Hung Hu, Dawn Silverman, Mary Ann Hoppa, "Vulnerability Assessments for SCADA Devices", in Proceeding of Virginia Academy of Science (VAS) 2019 Annual VAS Meeting, May 22-24, 2019, Old Dominion University, Norfolk, Virginia, USA. (Conference Abstract)

- Yen-Hung Hu, Abdinur Ali, Chung-Chu (George) Hsieh, Aurelia Williams, "Machine Learning Techniques for Malware Classification", in Proceeding of Virginia Academy of Science (VAS) 2019 Annual VAS Meeting, May 22-24, 2019, Old Dominion University, Norfolk, Virginia, USA. (Conference Abstract)
- Yen-Hung Hu, Felton Blow, Mary Ann Hoppa, "A Case Study of Wearable Technology Vulnerabilities – Fitbits", in Proceeding of Virginia Academy of Science (VAS) 2019 Annual VAS Meeting, May 22-24, 2019, Old Dominion University, Norfolk, Virginia, USA. (Conference Abstract)
- Oriel Rivers; Yen-Hung (Frank) Hu; Mary Ann Hoppa, "A Study on Cyber Attacks and Vulnerabilities in Mobile Payment Applications", in Proceeding of CISSE 2019, June 10-12, 2019, Las Vegas, Nevada, USA. (Conference Paper)
- Felton Blow; Yen-Hung (Frank) Hu; Mary Ann Hoppa, "A Study on Vulnerabilities and Threats to Wearable Devices", in Proceeding of CISSE 2019, June 10-12, 2019, Las Vegas, Nevada, USA. (Conference paper)
- Dawn Silverman; Yen-Hung (Frank) Hu; Mary Ann Hoppa, "A Study on Vulnerabilities and Threats to SCADA Devices", in Proceeding of CISSE 2019, June 10-12, 2019, Las Vegas, Nevada, USA. (Conference Paper)
- Jalen Mack, Yen-Hung (Frank) Hu, Mary Ann Hoppa, "A Study of Existing Cross-Site Scripting Detection and Prevention Techniques Using XAMPP and Virtual Box", Virginia Journal of Science, 70(3), 23 pp, 2019. (Journal Paper)
- Oriel Rivers; Yen-Hung (Frank) Hu; Mary Ann Hoppa, "A Study on Cyber Attacks and Vulnerabilities in Mobile Payment Applications", Journal of the Colloquium for Information System Security Education, Vol. 7, No. 1 (2020). (Journal Paper)
- Felton Blow; Yen-Hung (Frank) Hu; Mary Ann Hoppa, "A Study on Vulnerabilities and Threats to Wearable Devices", Journal of the Colloquium for Information System Security Education, Vol. 7, No. 1 (2020). (Journal Paper)
- Dawn Silverman; Yen-Hung (Frank) Hu; Mary Ann Hoppa, "A Study on Vulnerabilities and Threats to SCADA Devices", Journal of the Colloquium for Information System Security Education, Vol. 7, No. 1 (2020). (Journal Paper)
- Dominicia Williams, Yen-Hung (Frank) Hu, Mary Ann Hoppa, "Follow the Money Through Apple Pay," Journal of Journal of the Colloquium for Information System Security Education 2020, Vol. 8, No. 1, 2020. (Journal Paper)
- Dar'rell Pope, Yen-Hung (Frank) Hu, Mary Ann Hoppa, "A Survey on Securing Personally Identifiable Information on Smartphones," Virginia Journal of Science 2020. (Journal Paper)
- Abhinav Kommula, Yen-Hung (Frank) Hu, Mary Ann Hoppa, Samuel Olatunbosun, "Machine Learning Techniques to Enhance Container Network Security," in Proceeding of the 2020 International Conference on Computational Science and Computational Intelligence CSCI'20, December 16-18, 2020, Las Vegas, USA. (Conference Paper)
- Charles Hu, Yen-Hung (Frank) Hu, "Data Poisoning on Deep Learning Models," in Proceeding of the 2020 International Conference on Computational Science and Computational Intelligence CSCI'20, December 16-18, 2020, Las Vegas, USA. (Conference Paper)
- Danielle D. Godsey, Yen-Hung (Frank) Hu, Mary Ann Hoppa, "A Multi-Layered Approach to Fake News Identification, Measurement and Mitigation," in Proceeding of Future of Information and Communication Conference (FICC) 2021, April 29-31, 2021, Vancouver, Canada. (Conference Paper)
- Yen-Hung (Frank) Hu, Danielle D. Godsey, Mary Ann Hoppa, "A Multi-Layered Fake News Identifier Approach for Fake News Identification and Mitigation", 2021 Virginia Academy of Science Annual VAS Meeting, May 18, 2021, online. (Conference Abstract)

- Yen-Hung (Frank) Hu, "A Deep Learning Approach for Advanced Persistent Threats Analysis and Measurement", 2021 Virginia Academy of Science Annual VAS Meeting, May 18, 2021, online. (Conference Abstract)
- Yen-Hung (Frank) Hu, Chung-Chu (George) Hsieh, "A Study of Classifying Advanced Persistent Threats With Multi-Layered Deep Learning Approaches", in Proceeding of the 13th International Workshop on Cyberspace Security and Artificial Intelligence (CAI-2021), October 1 – 3, 2021, New York, USA. (Conference Paper)
- Yen-Hung (Frank) Hu, "Providing A Hands-on Advanced Persistent Threat Learning Experience Through Ethical Hacking Labs", in Proceeding of the 2021 Colloquium on Information Systems Security Education (CISSE) conference. (Conference Paper)
- Yelena Arishina, Yen-Hung Hu, Mary Ann Hoppa, "A Study of Video Conferencing Software Risks and Mitigation Strategies", in Proceeding of the 2021 Colloquium on Information Systems Security Education (CISSE) conference. (Conference Paper)
- Michelle Hu, Yen-Hung (Frank) Hu, "The Effects of Different Parameters on the Accuracy of Deep Learning Models for Predicting U.S. Citizen's Life Expectancy", in Proceeding of the 2021 International Conference on Computational Science and Computational Intelligence CSCI'21, December 15-17, 2021, Las Vegas, USA. (Conference Paper)

PRESENTATION (2015 – Present)
- "A Study on the Challenges of Building a Trustworthy Network", 2015 Virginia Academy of Science Annual Meeting, May 21-23, 2015, James Madison University, Harrisburg, Virginia, USA.
- "A Visualization Tool for Monitoring, Predicting and Mitigating Network Intrusions", 2015 Virginia Academy of Science Annual Meeting, May 21-23, 2015, James Madison University, Harrisburg, Virginia, USA.
- "Using open source vulnerability analysis tools to assess coding security and quality", 2016 Virginia Academy of Science Annual Meeting, May 18-20, 2016, University of Mary Washington, Fredericksburg, Virginia, USA.
- "Dynamical System Modeling", 2016 Virginia Academy of Science Annual Meeting, May 18-20, 2016, University of Mary Washington, Fredericksburg, Virginia, USA.
- "Assessing Java Coding Vulnerabilities in Undergraduate Software Engineering Education by Using Vulnerability Analysis Tools", CISSE 2016, June 13-15, 2016, Philadelphia, Pennsylvania, USA.
- "Big Data Content Mining Techniques for Detecting Cyberbullying in Social Media", 2017 Virginia Academy of Science Annual Meeting, May 17-19, 2017, Virginia Commonwealth University, Richmond, Virginia, USA.
- "Review of secured mobile application development process in the industry", 2017 Virginia Academy of Science Annual Meeting, May 17-19, 2017, Virginia Commonwealth University, Richmond, Virginia, USA.
- "A Case Study of BYOD Security Platforms Assessment", 2018 Virginia Academy of Science Annual Meeting, May 23-24, 2018, Longwood University, Farmville, Virginia, USA.
- "A Case Study of Securing Modern Application Architectures", 2018 Virginia Academy of Science Annual Meeting, May 23-24, 2018, Longwood University, Farmville, Virginia, USA.
- "A Study of the Evolution of Secure Software Development Architectures", CISSE 2018, June 9-13, 2018, New Orleans, Louisiana, USA.

- "Diffusion Metrics of the AES Symmetric Cryptosystem", CISSE 2018, June 9-13, 2018, 2018, New Orleans, Louisiana, USA.
- "Machine Learning Techniques for Classifying Malicious API Calls and N-Grams in Kaggle Dataset", 2019 IEEE SoutheastCon, April 11-14, 2019, Huntsville, Alabama, USA.
- "Vulnerability Assessments for SCADA Devices", 2019 Virginia Academy of Science Annual Meeting, May 22-24, 2019, Old Dominion University, Norfolk, Virginia, USA.
- "Machine Learning Techniques for Malware Classification", 2019 Virginia Academy of Science Annual Meeting, May 22-24, 2019, Old Dominion University, Norfolk, Virginia, USA.
- "A Case Study of Wearable Technology Vulnerabilities – Fitbits", 2019 Virginia Academy of Science Annual VAS Meeting, May 22-24, 2019, Old Dominion University, Norfolk, Virginia, USA.
- "A Study on Cyber Attacks and Vulnerabilities in Mobile Payment Applications", CISSE 2019, June 10-12, 2019, Las Vegas, Nevada, USA.
- "A Study on Vulnerabilities and Threats to Wearable Devices", CISSE 2019, June 10-12, 2019, Las Vegas, Nevada, USA.
- "A Study on Vulnerabilities and Threats to SCADA Devices", CISSE 2019, June 10-12, 2019, Las Vegas, Nevada, USA.
- "Follow the Money Through Apple Pay," CISSE 2020, November 4-5, 2020, online.
- "A Multi-Layered Approach to Fake News Identification, Measurement and Mitigation," in Proceeding of Future of Information and Communication Conference (FICC) 2021, April 29-31, 2021, online.
- "A Multi-Layered Fake News Identifier Approach for Fake News Identification and Mitigation", 2021 Virginia Academy of Science Annual VAS Meeting, May 18, 2021, online.
- "A Deep Learning Approach for Advanced Persistent Threats Analysis and Measurement", 2021 Virginia Academy of Science Annual VAS Meeting, May 18, 2021, online.
- "A Study of Classifying Advanced Persistent Threats With Multi-Layered Deep Learning Approaches", the 13th International Workshop on Cyberspace Security and Artificial Intelligence (CAI-2021), October 1 – 3, 2021, online.
- "Providing A Hands-on Advanced Persistent Threat Learning Experience Through Ethical Hacking Labs", CISSE 2021, October 4 – 6, 2021, online.

EXTERNAL FUNDING AWARDED (2015 – Present)
- PI, NSF "CyberCorps: SFS: Hampton University Graduate Education and Training Scholarship in Information Assurance (HU GETS-IA) Program", NSF DUE-1303409, $2.3 M, January 2013 - December 2017 (Resigned and Joined NSU in August 2014).
- Researcher, "K-20 Cybersecurity Workforce Pipeline", Department of Energy, October 2014 - September 2019, PI: Dr. Aurelia Williams.
- Researcher, "COE in Cyber Security", Air Force Research Lab, April 2014 - September 2019, PI: Dr. George Hsieh.
- Co-PI, "Knowledge-elicitation protocols for scenario development: ethical and human elements of decision-making in cyberspace," AFRL, $38,000, January 1, 2018 – August 15, 2018, PI: Mary Ann Hoppa.
- Co-PI, "Real Time Advanced Persistent Threats (APTs) Simulation, Modeling, Detection and Mitigation Using an Integrated High-Performance Computing (HPC) Machine

Learning Platform", DoD HBCU-UP, $441,696.64, September 1, 2019 – August 31, 2021, PI: Samuel Olatunbosun (PI), Co-PI: Mary Ann Hoppa.

- PI, "Developing Deep Learning Machine Learning Techniques for Classifying Advanced Malwares", 2019 Commonwealth Cyber Initiative (CCI) Fellowship, $50,000, June 1, 2020 – May 30, 2021. (1st Year Award)
- Co-PI, "Advanced Persistent Threats (APT) Summer Research Apprenticeship Program (APT Summer RAP) Recruitment", DoD HBCU Summer Research Apprenticeship Program, $14,575, 2020 Summer, PI: Samuel Olatunbosun, Co-PI: Mary Ann Hoppa.
- Co-PI, "Advanced Persistent Threats (APT) Summer Research Apprenticeship Program (APT Summer RAP) Recruitment", DoD HBCU Summer Research Apprenticeship Program, $18,290, 2021 Summer, PI: Samuel Olatunbosun, Co-PI: Mary Ann Hoppa.
- PI, "Developing Deep Learning Machine Learning Techniques for Classifying Advanced Malwares", 2019 Commonwealth Cyber Initiative (CCI) Fellowship, $50,000, June 1, 2021 – June 30, 2022. (2nd Year Award)
- PI, "Developing Deep Learning Techniques for Classifying Advanced Malwares", Nvidia Academic Hardware Grant Program, July 2021.

PROFESSIONAL AFFILIATION (2021)
- Senior Member of the Association of Computing Machinery (ACM)
- Member and Chair of the Research Committee of Virginia Academy of Science (VAS)
- Member of Planning Committee of the Colloquium for Information Systems Security Education (CISSE)