

# Brian Krupp

Computer Science, Baldwin Wallace University  
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## Education

### Doctor of Engineering

May 2015

Cleveland State University, Cleveland OH

Advisors: Dr. Wenbing Zhao and Dr. Nigamanth Sridhar

Dissertation: Enhancing Security and Privacy for Mobile Systems

### Master of Science in Computer and Information Science

May 2010

Cleveland State University, Cleveland OH

Advisor: Dr. Timothy Arndt

Thesis: Exploration of Dynamic Web Page Partitioning for Increased Web Page Delivery Performance

### Bachelor of Science in Computer Information Systems

May 2005

Baldwin-Wallace College, Berea OH

## Honors and Awards

- Recipient of BW Excellence in Community Engagement Award (2019)
- Recipient of Friends of Slavic Village Grant (2019)
- Center for Innovation and Growth (CIG) Champion at Baldwin Wallace University (2018-2021)
- Recipient of Scholarly Presentation for Domestic Travel Grant Award at Baldwin Wallace (2018, 2019)
- Recipient of Summer Grant Award at Baldwin Wallace University (2016)
- Recipient of Cleveland State University Doctoral Research Award (2013, 2014)
- IEEE ETA KAPPA NU (HKN) Honor Society (Inducted Spring 2013)
- Beta Gamma Sigma AACSB Honor Society (Inducted Spring 2010)
- Multiple recipient of HONK award at Key Bank (2005-2009)
- Recipient of Award of Excellence and Night on Town Award at Global eXchange Services (2004)

## Academic Experience

### Associate Professor of Computer Science

August 2021 to Present

Baldwin Wallace University, Berea OH

### Assistant Professor of Computer Science

August 2015 to July 2021

Baldwin Wallace University, Berea OH

### Graduate Assistant

Spring 2014

Cleveland State University, Cleveland OH

### Graduate Assistant / Research Assistant

Spring 2013

Cleveland State University, Cleveland OH

### Research Assistant

Fall 2012

Cleveland State University, Cleveland OH

**Lecturer**

Baldwin-Wallace College, Berea OH

Spring 2012

**Teaching Assistant**

Cleveland State University, Cleveland OH

Fall 2011

## Industry Experience

**Software Developer and Architect**

Hyland Software, Westlake OH

Developed iPhone, iPad, and Android applications for access to OnBase. Developed web services to be consumed by mobile applications using WCF. Architected various mobile solutions including offline access and two factor authentication. Partnered with human resources and development department to create key community outreach programs including tech clubs, tech camps, innovation showdown, and more.

May 2012 to Jul 2015

**Enterprise Solution Architect**

Designed architecture for key projects within community bank portfolio including UCM and SIP. Ensured new software solutions followed current architecture and enterprise standards. Assisted in creation of multi-year roadmaps for applications and technology within community bank portfolio.

Nov 2011 to May 2012

**Distributed Systems Engineer**

Lead engineer for PCI compliance in areas of logging and file integrity monitoring for entire bank. Lead engineer for security information and event management (SIEM) platform. Supported engineering of HSM, PKI, and centralized password management system. Developed LAMP application to supplement monitoring and management of Key's SIEM platform.

Jun 2010 to Nov 2011

**Information Security Consultant**

Performed web application penetration testing, security code reviews, and trained development teams on secure coding practices. Provided consulting on security of web applications being developed or purchased.

May 2009 to Jun 2010

**Distributed Systems Engineer**

Lead engineer for Ab Initio platform and designed enterprise architecture for ETL platform. Part of team of architects for Tivoli Access Manager platform which provided SSO and additional security to both external and internal web applications. Designed and developed several LAMP based applications that utilized a C API from IBM to view and manage environment, perform intrusion detection across WebSEAL servers, and troubleshoot Ab Initio environment. Provided formal Unix/Linux, Shell Scripting, and Introduction to Web Development Classes.

May 2005 to May 2009

**Technical Analyst**

Responsible for ensuring 100% uptime of open systems and network environment. Developed problem management, change management, and client tracking web applications using LAMP based architecture.

Jan 2003 to May 2005

## Teaching Experience

Baldwin Wallace University

- CSC 135 Web Site Design (F15, S16, F16, S17)
- CSC 141 Advanced Applications for Information Analysis (F15)
- CSC 160 Intro to Computer Science (F17, F18, F19, F20)

- CSC 210 Computer Science 1 (F17, S17, F18)
- CSC 240 Object Oriented Programming (F17, S18, F18, S19, F19, S20, F20, S21)
- CSC 275 Information Security Privacy and Ethics (S16)
- CSC 291 Computer Science Research Methods (F20)
- CSC 320 Computer Architecture and Organization (S16, S17, S18)
- CSC 325 Intermediate Programming (F16)
- CSC 330 Web Programming (S17, S18, S19, S20, S21)
- CSC 400 Operating Systems (F15, F16, F17, F18, F19, F20)

#### Cleveland State University

- EEC 484/584 Computer Networks (S14, S13)
- EEC 492/592 iPhone Application Development (S11)

## Research Grants

### External

- EPA People, Prosperity and the Planet (P3) - As Co-PI, grants funding research into the creation of a mobile platform to reduce food waste and hunger on college campuses. (2020-2021)
- Friends of Slavic Village Grant - Grant funded a week-long robotics camp taught at Mound STEM Middle School (2019)
- Google Cloud Platform Education Grant - Funded cloud computing costs for research in mobile security and privacy (2016)

### Internal

- Domestic Travel Grant - Funded travel and presentation costs to two conferences for presenting accepted work. (2018 and 2019)
- Summer Grant - Funded research in mobile security and privacy (2016)

## Peer-Reviewed Publications

- Brian Krupp. 2021. Rethinking the Limits of Mobile Operating System Permissions. 2021 Data Privacy Management - 16th International Workshop (DPM 2021)
- Brian Krupp, Malik Matthews, and Josh Hadden. 2021. An Analysis of Strengths and Weaknesses of TLS Utilization in iOS Applications. 2021 Fourteenth International Workshop on Selected Topics in Mobile and Wireless Computing (STWiMob 2021).
- Brian Krupp, Josh Hadden, and Malik Matthews. 2021. An Analysis of Web Tracking Domains in Mobile Applications. In 13th ACM Web Science Conference 2021 (WebSci '21),
- Brian Krupp, Emily Timko, Kyle Cox, William Hicks, Malik Burse and Christopher Banfield. 2021. "EMPAware: Analyzing Changes in User Perceptions of Mobile Privacy on iOS with Enhanced Awareness". 7th ACM International Workshop on Security and Privacy Analytics.
- Brian Krupp, Sydney Leither, Zack Egler, Tyler Hardy, Paul Peters. 2019. "CS+ Creating a Community Outreach Group in Computing from the Ground Up". Journal of Computer Science Colleges. (October 2019)
- Brian Krupp, Andrew Watkins. "CS0: Introducing Computing with Raspberry Pis. Proceedings of the 50th ACM Technical Symposium on Computer Science Education (SIGCSE '19)
- Brian Krupp, Tyler Rupert, Georgina Hasrouni, Bryan Istenes, and Kurt Wolfe. 2018. "Tready: a privacy centric open source home security system". J. Comput. Sci. Coll. 34, 1 (October 2018), 24-33.
- B. Krupp, D. Jesensky and A. Szampias, "SPEProxy: Enforcing fine grained security and privacy controls on unmodified mobile devices," 2017 IEEE 8th Annual Ubiquitous Computing, Electronics and Mobile Communication Conference (UEMCON), New York City, NY, USA, 2017, pp. 520-526.

- Brian Krupp, Nigamanth Sridhar, and Wenbing Zhao. "SPE: Security and Privacy Enhancement Framework for Mobile Devices", IEEE Transactions on Dependable and Secure Computing. vol. 14, no. 4, pp. 433-446, July-Aug. 1 2017.
- Brian Krupp, Nigamanth Sridhar, and Wenbing Zhao. "An Ontology for Enforcing Security and Privacy Policies on Mobile Devices." Proceedings of the 6th International Conference on Knowledge Engineering and Ontology Development (KEOD'14). October 21–24, 2014. Rome, Italy.
- Brian Krupp, Nigamanth Sridhar, and Wenbing Zhao "A Framework for Enhancing Security and Privacy on Unmodified Mobile Operating Systems", in Proceedings of MCSC Workshop on 33rd International Conference on Distributed Computing Systems (ICDCS) 2013
- Brian Krupp, Nigamanth Sridhar, and Wenbing Zhao "A Survey of Security and Privacy Protection in Mobile Devices", IGI Encyclopedia of Information Science and Technology 3rd Edition.
- Brian Krupp and Timothy Arndt "An Implementation of a Dynamic Partitioning Scheme for Web Pages", IJCSI Volume 9, Issue 3 May 2012
- Brian Krupp and Timothy Arndt "Dynamic Web Page Partitioning and Concurrent Retrieval for Improved Web Browser Response", in Proceedings of IADIS e-Society 2011, Avila, Spain, March 10-13, 2011

## Conference and Workshop Presentations

- Rethinking the Limits of Mobile Operating System Permissions. 2021 Data Privacy Management - 16th International Workshop (DPM 2021). September 2021.
- An Analysis of Strengths and Weaknesses of TLS Utilization in iOS Applications. 2021 Fourteenth International Workshop on Selected Topics in Mobile and Wireless Computing (STWiMob 2021). (Oct 2021)
- An Analysis of Web Tracking Domains in Mobile Applications. 13th ACM Web Science Conference 2021 (WebSci '21). June 2021.
- EMPAware: Analyzing Changes in User Perceptions of Mobile Privacy on iOS with Enhanced Awareness. 7th ACM International Workshop on Security and Privacy Analytics. April 2021.
- Measuring Student Confidence from Tech Camp Participation. Proceedings of the 52nd ACM Technical Symposium on Computer Science Education (Poster) (SIGCSE '21)
- CS+ Creating a Community Outreach Group in Computing from the Ground Up. ACM Midwest CCSC 2019. Lisle, IL. October 2019.
- CS0: Introducing Computing with Raspberry Pis. 50th ACM Technical Symposium on Computer Science Education (SIGCSE '19)
- Every Little Bit Counts: Experiences and Lessons Learned Building a Community Outreach Program from the Ground Up. Proceedings of the 50th ACM Technical Symposium on Computer Science Education (Poster) (SIGCSE '19)
- Tready: a privacy centric open source home security system. ACM Midwest CCSC 2018. Muncie, IN. September 2018.
- Nifty Tools: Using Bear and Trello to Manage Academic Demands. ACM Midwest CCSC 2018. Muncie, IN. September 2018.
- SPEProxy: Enforcing Fine Grained Security and Privacy Controls on Unmodified Mobile Devices. IEEE 8th Annual Ubiquitous Computing, Electronics and Mobile Communication Conference (UEMCON) New York, NY. October 2017.
- Augmenting Mobile Security and Privacy Controls. BSides Cleveland Security Conference, Cleveland OH. June 2015.
- An Ontology for Enforcing Security and Privacy Policies on Mobile Devices. Proceedings of the 6th International Conference on Knowledge Engineering and Ontology Development. Rome, Italy. October 2014.
- A Framework for Enhancing Security and Privacy on Unmodified Mobile Operating System. The 1st ICDCS International Workshop on Mobile Cloud and Social Computing (MCSCS 2013). Philadelphia, PA. July 2013.

## Professional Activities and Service

- Faculty Advisor to CS+ Community Outreach Group (2015-Present)
- Serving as representative to Service Learning Advisory Council (2020 - Present)
- Partnered with Campus Kitchen and Mentor Students to Create Food Sharing Application (2018-Present)
- Created Career Planning Tool in Partnership with Career Services Department (2019-Present)
- Partnered with Boys and Girls Club and Slavic Village to host Robotics Camp at Mound STEM in CMSD with grant awarded from "Friends of Slavic Village" (2019)
- Hosted Programming Camp at Cuyahoga Hills Juvenile Correction Center (2019)
- Partnered with Boys and Girls Club and Slavic Village to host Tech Club "The Hive" at Mound STEM in CMSD (2018-2019)
- Founding Faculty Fellow of BusinessWorks Program at Baldwin Wallace (2018-2019)
- Hosted STEM Recruitment Event at Baldwin Wallace University (2018)
- Presented to Cuyahoga Hills Juvenile Correction Center on Time and Purpose (2018)
- Hosted Tech Camps at BW for Middle School and High School Students (2017-Present)
- Presented to Middle and High Schools on Computing Including Westlake, CVCC, Berea-Midpark, Rocky River, and Akron STEM (2016-Present)
- Assisted in hosting TechCorps Coding Camp (2016, 2017, 2018)
- Founding Fellow for Baldwin Wallace Business Works Fellowship (2018-2019)
- Serve as Faculty Fellow for Student Success at Baldwin Wallace University (2017-Present)
- Provided 1 Day Robotics and Web Development Camp for YWCA Warren (2018)
- Provided 2 Hour Coding Workshop for Minds Matter Program (2017, 2018)
- Served as Chair of Faculty Development Committee (2017-2018)
- Participated in Rocky River STEM Day (2017)
- Participated at RITE Summit (Spring 2018 and Fall 2018)
- Served as Session Chair for IEEE UEMCON (2017)
- Served as Reviewer for SIGCSE (2018)
- Presented at New Faculty Information Session at Baldwin Wallace University (2018)
- Serve on RITE Board and Assist with Strategy for High School Programs (2016-Present)
- Participated in "Assessment Palooza" for Writing Assessment (2017)
- Service Learning Faculty Fellow (2017)
- Attending PKAL Leadership Institute in Summer of 2017 (2017)
- Served as Member of Faculty Development Committee (2016-2017)
- Presented and Met with Potential Students and Parents for Junior Visit Day at Baldwin Wallace (2016-2017)
- Served as Reviewer for IEEE Potentials (2016)
- Recorded Meeting Minutes for CS Department (2015-2018)
- Recorded Meeting Minutes for School of Natural Sciences, Mathematics, and Computing (2017-2018)
- Serve on Cuyahoga Valley Career Center Advisory Board (2014-Present)
- Participated in IT Strategic Planning Committee Evaluation of Digital Learning Experience (2017)
- Presented to New Faculty Luncheon on "Exploring Faculty Roles in High Impact Practices that Foster Student Learning" (2017)
- Presented at Pizza with a Prof at Baldwin Wallace on Grant Writing (2017)
- Faculty Advisor for Lambda Chi Alpha Fraternity (2017-2018)
- Participated in Center of Teaching Excellence Interest Group (2017)
- Participated in Fall Visit Day at Baldwin Wallace University (2015-2016)
- Reviewer for Smart World Conference (2016)
- Presented to National Computer Camp at Baldwin Wallace (2016)
- Participated in Panel for Tech Talk for OHTech Tech Week (2016)
- Served as Grace Hopper Conference (GHC) Scholarship Application Reviewer (2016)
- Served as Judge for Hyland Software Hackathon (2015)

- Participated in Panel for STEM Scholars (2015)
- Reviewer for IEEE Transactions on Emerging Topics in Computing (2014)
- Partnered with Tech Corps to Create Curriculum for High School Programming Camp (2014-2015)
- Created “Hyland Tech Club” and "Hy-Tech Camps" at Hyland Software (2014)
- Partnered with Beck Center for the Arts and High School Interns to Create Scavenger Hunt Application (2014)
- Partnered with Hyland Software Human Resources Department to Hold Open House for NEO CS Faculty and Staff (2014)
- Ran “Hour of Code” Field Trips at Hyland Software (2014)
- Organized First Annual “High School Innovation Showdown” at Hyland Software (2013)
- Reviewer for IGI Global Chapter “Encyclopedia of Information Science and Technology” (2012)

## Current Affiliations

- ACM Professional Member. 2015 to Present
- ACM SIGCSE Member. 2015 to Present.
- ACM SIGCAS Member. 2020 to Present.
- ACM SIGAPP Member. 2020 to Present.

## Industry Certifications

- CompTIA Certified Document Imaging Architect (CDIA+). Attained 2012.
- AIIM Electronic Content Management Practitioner (ECMp). Attained 2012.