

Erin Colvin, M.Ed., MS, DCS

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HIGHLY EXPERIENCED COMPUTER SCIENTIST; SOFTWARE ENGINEER; TOP SECRET CLEARANCE

Core Competencies

C++ • C# • Java • Fuzzy Logic • Git • Data Mining • Information Retrieval • MOSA • Software Testing
• Python • Virtual/Augmented Reality • Project Management • Software Reuse • ML • Team Building & Leadership
Curriculum Development • DoD Standards • Software Engineering • .NET • Top Secret Security Clearance

Education

- D.C.S., Computer Science, Colorado Technical University, Colorado Springs, CO, 2014
 - Research area: Information Retrieval with Fuzzy Logic for Software Reuse
 - Mentor: Dr. Donald Kraft, Professor Emeritus LSU/Professor at the US Air Force Academy
- M.S., Computer Science, American Sentinel University, Aurora, CO, 2011
- M.Ed., Secondary Education, Chaminade University, Honolulu, HI, 2005
- B.S., Computer Science, Middle Tennessee State University, Murfreesboro, TN, 1999

Certifications

Certified Ethical Hacker, EC-Council (ECC29845377417), 2017-2020

Publications

Colvin, E. (2022). Dual Standards Interoperability, Creating an OMS Adapter for BALSAs. *The Open Group FACE™ and SOSA™ US Air Force Technical Interchange Meeting, September 2022. Dayton, OH.*

Colvin, E. (2021). Increasing Interoperability for The FACE Technical Standard. *The Open Group FACE™ Army Technical Interchange Meeting, September 2021. Birmingham, AL.*

Colvin, E., Cho, I., Donnelly, T., Le, N., & Naquib, M., (2018). Augmented Reality Tour of Campus. *ICKM Conference 2018, Vancouver, Canada.*

Colvin, E., & Hance, N., (2019). Instruction Recall Under Stress. *SIGITE Conference 2019, Tacoma, WA, USA. DOI: <https://doi.org/10.1145/3349266.3351372>.*

Colvin, E., Kraft, D., (2015). Fuzzy retrieval for Software Reuse. *Journal of the Association for Science and Technology*. DOI: 10.1002/asi.23584.

Colvin, E., Kraft, D., (2015). Fuzzy retrieval for Software Reuse. *ASIST Conference 2015, St. Louis, MO, USA.*

Kraft, D., Colvin, E., (2017) Fuzzy Information Retrieval. *Morgan & Claypool Publishers.*

Kraft, D., Colvin, E., Bordogna, G. & Pasi, G., (2015). Fuzzy Information Retrieval Systems: A Historical Perspective. In J. Kacprzyk, (Ed.), *Studies in Fuzziness and Soft Computing. Springer Press.*

Professional Experience

Aviation Systems Engineering Company, Lexington Park, MD

2023- Present

Senior Software Engineer

Work with DoD Sponsors PMA-205 to develop data science tools for the Next Generation Threat System simulation for Naval Aviation post mission debrief. Using data science tools, data from virtual and real blue and red aviation missions are collected in real time and analyzed for possible mishaps, risks, and stored for post mission reports. Created learning tools for users in Fallon, NV to ease into the tooling for ease of understanding and updated the legacy systems into more modern interfaces including Flask, Docker containers and Kubernetes to fit into the

Agile framework. Python and Jupyter notebooks along with C++ integrations allowed pilots to quickly move into the training environment and Apache tools like Arrow, Spark, and Flight helped us quickly build a data science toolkit.

MITRE, Lexington Park, MD

2019- 2023

Lead Software Engineer; Team Lead

Work with DoD Sponsors to create open standards and modular components for the F35 Air Vehicle so third-party vendors can openly compete for pieces of the market in a new and diverse new way. Work with teams from Georgia Technical Research Institute and MIT Lincoln Labs to create applications in C#, C++ and Java that would go into the F-35 and other DoD vehicles and be used to test DoD applications. Integrated OMS, and The FACE Standard to create interoperability, member of FACE Consortia, MOSWG and SOSA Consortia. Team Leader for MITRE Open Systems Team leading open standards for NAVAIR at PAX RIVER, MD. Created a web application to help users answer pre-SRR questions using ASP.NET and C# in AWS.

LinkedIn Learning, Cupertino, CA

2017-2020

Author; C++ content SME

Created custom courses for the LinkedIn Learning library. Using SlideShare and Google Docs, collaborated with content manager to devise animation or on-screen content and corresponding script. Created assessments and exercises for courses. Recorded videos in a three to four day period using different styles of content development. Courses include, Learning Fuzzy Logic, Learning C++ and Nail Your C++ Interview.

SixGen, Annapolis, MD

2019-2019

Cybersecurity Instructor

Taught cyber security fundamentals to students during two week course. Class of all girls in Saudi Arabia using a number of teaching techniques to help avoid language barrier. Course included lecture with slides and lab for eight hours a day for two weeks. Students got to experiment with multiple VMs, tools for protecting, scanning and disabling/enabling network features.

TEALS K12 Microsoft Philanthropy, Redmond, WA

2019-2019

Curriculum, Instruction and Training Manager

Created a curriculum to teach volunteers from the tech industry how to teach in a high school setting. Created a curriculum to aid teachers in their understanding of what the program is about using slides and self-made assignments by converting them into Canvas LMS. Helped prepare and successfully set up a CS Fair for over 2000 local high school students, vendors, Colleges and Universities and teachers to learn about new opportunities in the field of CS. And facilitating a Programming contest for local HS students to participate and compete for money and/or prizes.

Western Washington University, Bellingham, WA

2017-2018

Instructor CS 140, CS 172, CS 492, CS493

Taught Introduction to Programming with C++, Robotics I with RobotC and Senior Capstone II. Required 3-day interaction with over 100 students in a lecture hall setting and then directing up to 7 teaching assistants to instruct lab assignments. Advised up to six senior capstone projects at one time, including designing and meeting with each team weekly. Created curriculum for every course using C++ and RobotC. Lead projects from requirements analysis to software development to testing and delivery. Projects of note: Decoy I.E.D. using Nmap, OneNet Protocol Analysis: Determining the security of a new protocol for maritime vessels, designing a Virtual Reality Driving Simulator for Snowy Road Conditions; Augmented Reality tour of Campus; Fuzzy Logic used to detect plagiarism in C++ programs of students. Used multiple platforms including Git, Trello, Slack, Jira, PHP, Nmap, SQL, Wireshark, CSS, HTML, JavaScript, Java, C++, C#, Unity, Python, R, C#, .NET, and Data Mining.

Regis University, Denver, CO

2014-2016

Associate Instructor Online CS 202, CS 361, CS 362/Course Development CS 202

Taught upper level and introductory undergraduate courses including Data Structures, Object Oriented Programming with C++, Introduction to Object Oriented Programming with Alice and Java. Required online interaction with students 5 days a week, grading programs and assignments, and discussion posts as well as responding to emails within 24 hours. I often created videos for students to walk them through the material to help them get a visual feel of what is expected. I also created power point slides to summarize the readings for those that

did not understand the readings. Tasked to redesign the introductory Introduction to Computer Science course that includes topics covered through all four years of the college experience. Had to create assignments and content from software to include sorting, more specifically topological sort, quick sort, and bubble sort, and Dijkstra's algorithm to Warshall's algorithm.

John Hopkins University, Center for Talented Youth, Baltimore, MD

2015-2016

Online Instructor

Taught gifted High School students in an online environment. Created and taught Intro to Java and Advanced Java courses, students were able to work at their own pace so keeping track of student's progress as they moved along, helping them as struggled, along with interacting with them and their parents. Responding to emails within 24 hours was top priority and grading with encouraging words as to not discourage such young students. Have a 100% success rate in students wanting to pursue a programming career so far.

Southern New Hampshire University, Manchester, NH

2014-2015

Adjunct Instructor Online

Taught Intro to Software Design with Java and Business Analysis with Software Design and OO Analysis.

Anne Arundel Community College, Arnold, MD

2010-2011

Instructor II

Created and taught Introduction to Object Oriented Programming with Alice, Python, Argo UML and Java. Also taught Programming I with Java. Work with students on programming projects and assignments. Taught both traditionally, in the classroom, hybrid courses and online courses.

ITT Technical Institute, Jacksonville, FL

2005-2007

Adjunct Instructor

Taught Introduction to Computer Programming with both Visual Basic 6.0 and Visual Basic .NET 2003. Also taught Data Structures, Software Engineering and Intermediate Programming with Visual Basic .NET 2003.

Chris Lethem Programming Services, Kaneohe, HI

2003-2005

Software Engineer

Developed a front-end application that would allow customers to book activities on the island of Oahu, using ASP.NET, and SQL Server. Created a booking system for an online wedding company and local hotel using ASP.NET, JavaScript, Java, C# and TSQL.

Square D Company, LaVergne, TN

1998 - 2002

Software Engineer

Performed full life cycle development of new software products and services while developing and maintaining existing software products. Developed e-commerce applications using Active Server Pages, Visual Basic, and SQL Server. Assisted with the writing of functional/technical specifications for software development. Created and maintained customer relationships. Developed artificial intelligence application for a web based worldwide monitoring system using ASP, MDX, SQL, and HTML. Required research and collaboration with Senior Electrical Engineers.

Professional Training

MOSA 101, DAU, 2020

Acquisition 101, DAU, 2020

Acquisition Law, DAU, 2020

STEM Inclusion workshop, Western Washington University, 2018

Professional Affiliations

MOSWG, 2020 - Present

FACE Consortium, 2019 – Present

Association for Information Science and Technology, 2015 - Present

Association for Information Science and Technology, Editorial Board member, 2017-2018

Consortium for Computer Science in Colleges, Voting Member, 2015-Present
National Centers for Simulation, 2014-Present
IEEE, Member, 2010-Present
Association of Computing Machinery, Member, 2010-Present

Volunteer Work

Lego Mindstorms, Parent Coach, Colorado Springs, Mountain View Elementary, 2014-2015
VP-4, (US Navy Patrol Squadron 4), Officer's Spouses Club, President, 2012-2013
VP-4, Officer's Spouses Club, Member, 2011-2012
VP-9, Officer's Spouses Club, Board Member (Newsletter), 2004-2005
VP-9, Officer's Spouses Club, Member, 2003-2004