Allan Brockenbrough

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EDUCATIONAL BACKGROUND

Doctor of Science in Computer Science, Aspen University, 2021

MS Degree in Computer Science, University of California, Berkeley, 1982

Bachelor of Science in Mathematics/Computer Science, Carnegie Mellon University, 1980
Graduated with High Honors

ACADEMIC POSITIONS HELD

Assistant Professor, Computer Science Department, Salem State University
Sept 2022 – Present

Full-Time Temporary Faculty, Computer Science Department, Salem State University
Sept 2021 - May 2022

Adjunct Faculty, Computer Science Department, Endicott College
Sept 2014 -Aug 2021

Teaching Assistant, EECS Department, University of California, Berkeley
Sept 1980 -Dec 1981
AWARD: EECS *Outstanding Teaching Assistant Award* 1981-1982

TEACHING

2024 Fall	CSC 105 Survey of Computer Science. Unrated
2024 Fall	CSC 351 Software Engineer II. Unrated
2023 Spring	CSC 521 Computer Science Capstone Projects. Unrated.
2022 Fall	CSC 105 Survey of Computer Science. Rated 4.6/5.0
2022 Fall	CSC 351 Software Engineer II. Rated 4.4/5.0
2022 Fall	CSC 415 Analysis of Algorithms. Rated 4.9/5.0
2022 Fall	CSC 521 Computer Science Capstone Projects. Unrated.
2022 Spring	CSC 115 Software Design/Programming II. Unrated.
2022 Spring	CSC 295 Computer Architecture/Organization. Unrated.
2022 Spring	CSC 521 Computer Science Capstone Projects. Unrated.

2021 Fall	CSC 105 Survey of Computer Science. Rated 4.3/5.0
2021 Fall	CSC 415 Analysis of Algorithms. Rated 4.0/5.0

CONFERENCE COMMITTEES, ORGANIZATION POSITIONS AND EVENTS

1. Program Committee, Technical Symposium on Computer Science Education (SIGCSE TS) (2023-2024)
2. Session Chair, Massachusetts Undergraduate Research Conference, Session "AI's Impact on Digital Security: Challenges & Opportunities" (2023)
3. KIPP Academy STEM Fair, Lynn, Massachusetts. Salem State University presentation table of structures in 3D virtual reality. (2023)
4. Associate of Computer Machinery (ACM) Faculty Sponsor Student Chapter (2023)

UNIVERSITY COMMITTEES, ORGANIZATIONS, AND PRESENTATIONS

1. Center for Teaching Innovation, Teaching in the Age of AI FPLC (2024)
2. University Academic Policy Committee (2023-2024)
3. Salem State University Spring Teaching and Learning Symposium (2024) - AI Panel member
4. Salem State University Orchestra, 1st Clarinetist (2022-2024)
5. Collaborative Online International Learning (COIL) Faculty Community (2023)
6. Center for Teaching Innovation, Faculty Innovation Showcase Presentation (2023)Salem State University Band, Clarinetist (2023)

UNIVERSITY GRANTS

1. Collaborative Online International Learning Stipend (2023)
2. Open Education Resources Mini-grant (2023)
3. Scholarship Support Grant (2023)

COMPUTER SCIENCE DEPARTMENT COMMITTEES AND ORGANIZATIONS

1. Association for Computing Machinery (ACM) Student Chapter, Faculty Advisor (2023)
2. Salem State Coding Contest, Coordinator (2022-2023)
3. Salem State Programming Club Advisor (2022-2023)
4. Computer Science ABET Accreditation Committee (2022-2023)
5. Computer Science Curriculum Committee (22022-2023)
6. Computer Science Dr. Robert Briney Endowment Committee (2022-2023)
7. Computer Science Industry Advisory Board Committee (2022-2023)
8. Computer Science Bulletin Board Committee (2022)
9. Computer Science Masters/Certificate Program Task Force Committee (2022)

PATENTS

1. *Multi-Client Single-Session Media Streaming,* Brockenbrough, A. et al. (2007). (Document Number . US 20070294423 A1). U.S. Patent and Trademark Office.
2. *Method And Apparatus For Combining Ambient Sound Effects To Voice Messages,* Brockenbrough, A. et al. (2007). (Document Number . US 7203286 B1). U.S. Patent and Trademark Office.

3. *Method And Apparatus For Managing Calls Through An Entertainment Center,* Brockenbrough, A. et al. (2007). (Document Number . US 7184522 B2). U.S. Patent and Trademark Office.
4. *Use Of Historical Data For A Voice Application Interface,* Brockenbrough, A. et al. (2003). (Document Number . US 20030101060 A1). U.S. Patent and Trademark Office.
5. *Method and system for one party to pass a calling invitation to another party,* Brockenbrough, A. et al. (2003). (Document Number. US 20030063735 A1). U.S. Patent and Trademark Office.
6. *Method And Apparatus For Providing Images For Caller Identification Over A Mobile Network,* Brockenbrough, A. et al. (2003). (Document Number . US 20030032413 A1). U.S. Patent and Trademark Office.
7. *System Using A Personal Digital Assistant To Redirect A Voice Message To A Telephone,* Brockenbrough, A. et al. (2002). (Document Number . US 20020076004 A1). U.S. Patent and Trademark Office.

PUBLISHED WORKS

1. Brockenbrough, A. Salinas, D. (2024). Using Generative AI to Create User Stories in the Software Engineering Classroom. IEEE/Conference on Software Engineering Education and Training Proceedings. 2024; 125-129.
2. Brockenbrough, A. (2023). Innovating the software engineering class through multi-team development. *INTED2023 Proceedings.* 2023; 1776-1781. doi:10.21125/inted.2023.0503
3. Brockenbrough, A. (1981). Variability and development of a normative database for saccadic eye movements. *Investigative Ophthalmology & Visual Science.* 1981 Jul; 21(1 Pt 1):116-25.

PROFESSIONAL MEMBERSHIPS

Association for Computing Machinery (ACM)

ACM Special Interest Group on Computer Science Education (SIGCSE)

Institute of Electrical and Electronics Engineers (IEEE)

INDUSTRY POSITIONS HELD

Director of Information Technology 2014 – Aug 2021
Endicott College

Managed a team of software engineers developing, integrating, and supporting software applications at the college. Create strategies for introducing technology innovations at the college. Met with college departments to discuss needs, establish requirements, and implement targeted solutions. Led the integration of multiple new products including data analytics, career services, judicial, institutional advancement, document imaging, electronic forms, and student/faculty portal. Introduced continuous/automated data integrity. Created data analytic dashboards for the college, by building a data warehouse, displaying a variety of college metrics. Created data analytic processes updating staff on the latest information and dynamically monitoring data to alert staff about data integrity issues.

Principal Software Engineer – *Robotics* 2012 - 2014
Amazon Robotics

Member of a team that created software directing robot units to transport inventory in Amazon fulfillment centers. Led the portion of the system that tracks Amazon inventory shelving units. By knowing the location of inventory in transportable shelves on the floor, the robot path could be planned. The cloud service provided an HTTP-based interface and included synchronization software to ensure data consistency.

Principal Software Engineer – *Data Processing* 2009 – 2012
Ericsson/MetraTech

The hands-on lead of a technical team creating software for customer billing for a variety of business models. Specialized in back-end software to interface with tax calculation packages as part of a bill-creation product. Created product requirements based on discussions with stakeholders, and designed and implemented the application.

Principal Software Engineer – *Telecommunications* 1994 – 2009
Comverse/Boston Technology

Led technical teams developing telecommunications applications for customers like Verizon. Guided the specification, architecture, design, and implementation. These applications included voice interfaces, streaming video to the cell phone, and the development of a multi-player mobile game framework.

Software Engineer– *Intelligence Community* 1990 – 1994
The Analytical Sciences Corporation

Developed applications for the intelligence community to combat terrorism. These applications included creating a system for storing and retrieving information on terrorist events. The system captured information from a variety of incoming sources and organized the information for easy retrieval.

Software Engineer – *Mechanical Engineering* 1987 – 1990
Iconnex Corporation

Led a team of engineers developing software to support mechanical engineering design. The software integrated simple drawing tools with mathematically based requirements to help the engineer sketch a prototype solution.

Software Engineer – *Image Detection* 1985 – 1987
American Robot Corporation AIVC

Software developer for application to detect defects in assembly line components. To detect the defect, the system captured an image of the assembly and applied edge-detection techniques. The detected edges were then compared with the expected edges to determine if there was an anomaly in the component.

Software Engineer – *Civil Engineering* 1982 – 1985
Consolidation Coal Company

Created various civil engineering software programs to aid in the operation and construction of coal mining operations. An example application calculated quantities of cut and fill material from road cross-sections to determine the amount of fill material to be transported.