

ZECHUN CAO

Curriculum Vitae

PERSONAL

Work Address: Department of Computing and Cyber Security
Texas A&M University - San Antonio
STEM 211N
One University Way
San Antonio, TX 78224

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RESEARCH INTERESTS

- Behavior-based Intrusion Detection
- Machine Learning and Pattern Recognition
- Artificial Intelligence

EDUCATION

University of Houston December 2020
Ph.D. in Computer Science
Houston, TX
Advisor: Prof. Stephen Huang
Dissertation: Intrusion Detection: Detecting Network Intruders Behind Anonymity
Networks and Identifying Intruders on the Hosts by Modeling User Behaviors

University of Houston August 2013
M.S. in Computer Science
Houston, TX
Thesis: A Methodology for Finding Uniform Regions in Spatial Data and Its
Application to Analyzing the Composition of Cities

China University of Petroleum June 2008
B.E. in Electrical Engineering
Beijing, China

PROFESSIONAL EXPERIENCE

Lecturer August 2019 - Present
Department of Computing and Cyber Security,
Texas A&M University - San Antonio
San Antonio, TX

REU Program Coordinator (NSF) August 2015 - August 2019
Research Experiences for Undergraduates, University of Houston
Houston, TX

- Assist PI in writing NSF grant proposal, received \$360,000 for three years in 2016 under award number [NSF-1659755](#).
- Develop and maintain REU [website](#) to advertise the program and recruit participants across the nation.
- Organize and participate in meetings with PI and committee members for candidates selection and program scheduling.
- Make research schedule and provide guidance for the participants throughout the program.

- Design and organize development series workshops to encourage and help participants applying for graduate school.
- Coordinate with GRE instructor to provide customized GRE classes to help participants prepare for the exam.
- Invite keynote speakers for weekly research seminars to keep participants inspired and motivated in research environment.
- Schedule and organize research oral presentations and posters exhibition to offer participants opportunities to share their research with fellow researchers in the university.
- Follow up with past participants for their career achievements and feedback.

Software Developer

Baylor College of Medicine

June 2013 - July 2015

Houston, TX

- Developed and delivered web based components of Clinical Trail Management System (CTMS) for automating medical data workflow and managing large amount of patients' clinic records.
- Designed and optimized applications' front end by extensive use of JavaScript, JQuery, HTML and CSS.
- Optimized and developed SQL procedures and triggers to handle stress runs and achieve preferred performance.
- Performed maintenance activities for multiple releases of a web based applications used to track and analyze patients' medical data.
- Implemented data integration and workflow applications by utilizing SQL Server Integration Services (SSIS) for data ETL and automation of SQL Server maintenance.
- Developed reports to evaluate impact of medical scenarios on clinical study; improving scenario analysis and helping decision making for the users.

Teaching Assistant

Department of Computer Science, University of Houston

August 2010 - June 2013

Houston, TX

- Undergraduate Level: **Introduction to Computer Science, Data Structure and Algorithms, Database System.**
- Graduate Level: **Machine Learning, Artificial Intelligence, Data Structure and Algorithms.**
- Taught the lab session of Introduction to Computer Science independently, developed customized programming examples and exercises for students based on their skill levels.
- Took extra mile to engage students with less programming experience in the lab, and interacted with students to push them think critically.
- Graded class assignments, projects and exams with constructive suggestions to help students improve in the classroom and exams.
- Hosted office hours for students' questions and concerns, and communicated with instructors with students' feedback.
- Assisted instructors in preparing teaching materials and exams questions.

PUBLICATIONS

- S. S. Huang, **Z. Cao**, "Detecting Malicious Users Behind Circuit-Based Anonymity Networks," in *IEEE Access*, Volume 8, pp. 208610-208622, November 2020.
- S. S. Huang, **Z. Cao**, C. E. Raines, M. N. Yang, C. Simon, "Detecting Intruders by User File Access Patterns," in *Proceedings of the 13th International Conference on Network and System Security (NSS)*, Sapporo, Japan, pp. 320-335, December 2019.

- Z. Liang, Y. Huang, **Z. Cao**, T. Liu, Y. Wang, “Creativity in Trusted Data: Research on Application of Blockchain in Supply Chain,” in *International Journal of Performability Engineering*, Volume 15, Issue 2, pp. 526-535, February 2019.
- **Z. Cao** and S. S. Huang, “Detecting Intruders and Preventing Hackers from Evasion by Tor Circuit Selection,” in *Proceedings of the 17th IEEE International Conference On Trust, Security And Privacy In Computing And Communications/12th IEEE International Conference On Big Data Science And Engineering (TrustCom/BigDataSE)*, New York, NY, pp. 475-480, August 2018.
- **Z. Cao**, S. Wang, G. Forestier, A. Puissant, C.F. Eick, “Analyzing the Composition of Cities Using Spatial Clustering,” in *Proceedings of the 2nd ACM SIGKDD International Workshop on Urban Computing (UrbComp’13)*, Chicago, Illinois, pp. 14:1-14:8, August 2013.
- N. Zhang, R. Liu, A. Zhang, R. Yu, **Z. Cao**, “Study and Research on Computer Network Based on Plastic Optical Fiber,” in *Journal of Optoelectronics Laser*, Volume 18, Issue 9, pp. 1071-1073, 2007.

PRESENTATIONS

- Paper presentation at the 17th IEEE International Conference On Trust, Security And Privacy In Computing And Communications/12th IEEE International Conference On Big Data Science And Engineering (TrustCom/BigDataSE), New York, July 31st - August 3rd, 2018.
- Poster presentation at the PhD Research Colloquium at the University of Houston, Houston, Texas, April 14th, 2017.
- Research presentation at the 2nd PhD Showcase at the University of Houston, Houston, Texas, February 8th, 2013. (Honorable Mention Award)

PROFESSIONAL SERVICE

- Paper Review, IEEE International Conference on Advanced Information Networking and Applications (AINA), 2016
- Paper Review, IEEE International Conference on Data Mining (ICDM), 2012, 2013

HONORS AND AWARDS

- Travel Grant for “17th IEEE International Conference On Trust, Security And Privacy In Computing And Communications/12th IEEE International Conference On Big Data Science And Engineering (TrustCom/BigDataSE)”, New York, July 31st - August 3rd, 2018.
- Graduate Tuition Fellowships, University of Houston, 2010 - 2013, 2015 - 2017

TECHNICAL STRENGTHS

Programming	Java, R, C#, C/C++, Python, T _E X, Fortran
Web Development	JavaScript, PHP, HTML5, CSS
Databases	Microsoft SQL Server, MySQL, PostgreSQL
Management	Git, SVN, Apache