STEPHEN P. TARZIA

Assistant Professor of Instruction
Director of TGS MS Programs for CS, CE, and EE
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Updated: December 11, 2019

EDUCATION

Ph.D. in Computer Engineering, Northwestern University 2011
Dissertation: "Acoustic sensing of location and user presence on mobile computers."
Advisor: Peter A. Dinda

M.S. in Computer Engineering, Northwestern University 2008
Advisor: Robert P. Dick

B.S. in Computer Engineering, magna cum laude, Columbia University 2005

EMPLOYMENT

Northwestern University
Assistant Professor of Instruction, Director of TGS MS Programs for CS, CE, and EE 2019–present
Assistant Chair and Lecturer, Electrical Engineering and Computer Science Dept. 2017–2019
Senior Computational Research Consultant, Kellogg School of Business 2017
Knight Lab Professional Fellow, Medill School of Journalism 2016

FastModel Sports, Chicago, Illinois
V.P. of Engineering 2014–2015

Signal.co, Chicago, Illinois
Software Engineer 2014

Founder, Pumpkin Box LLC, Evanston, Illinois 2014

Vaporstream Inc., Chicago, Illinois
V.P. and General Manager of Consumer Products 2013

V.P. of Engineering 2012–2013
Software Engineer 2011–2012

Honors & Awards

Knight Lab Professional Fellowship (6 month stipend), Northwestern Univ. 2016

Dr. John N. Nicholson Fellowship (tuition and stipend), Northwestern Univ. 2007–2011

Walter P. Murphy Fellowship (tuition and stipend), Northwestern Univ. 2006–2007

Magna Cum Laude (top 15% of graduating class), Columbia Univ. 2005

Teaching

Northwestern University

(Lectures are posted on YouTube. Search for Tarzia EECS-340 and Tarzia EECS-317.)

CS-396 Scalable Software Architectures

Developed an entirely new course from scratch. 85 students registered. Fall 2019

EECS-340 Computer Networking

5.39/6.0 instruction rating. 5.24/6.0 overall course rating. Fall 2018
5.30/6.0 instruction rating. 5.05/6.0 overall course rating. Spring 2018

EECS-343 Operating Systems

4.47/6.0 instruction rating. 4.45/6.0 overall course rating. Spring 2019
Spring 2019 course quality suffered due to large size (145 students) and unexpected teaching overload.
5.32/6.0 instruction rating. 5.18/6.0 overall course rating. Winter 2018

EECS-317 Data Management and Information Processing

This course was redeveloped from scratch, with totally new assignments and materials.
5.33/6.0 instruction rating. 5.06/6.0 overall course rating. Spring 2019
5.57/6.0 instruction rating. 5.30/6.0 overall course rating. Fall 2018
5.42/6.0 instruction rating. 5.27/6.0 overall course rating. Fall 2017

Teaching assistant for EECS-311 Data Structures Spring 2007
Teaching assistant for EECS-101 An Introduction to Computer Science for Everyone Spring 2010

Amundsen High School and South Shore High School, Chicago, Illinois

Guest earth sciences teacher Mar. 31 and Apr. 30, 2009

Science and Technology Entry Program (STEP), New York, New York

Robotics teacher for K-12 enrichment programs Spring, Summer 2004

ADVISING

Undergraduate research projects:

- Saif Bhatti (May 2019–present): "Bio-Acoustic Monitoring Technology Implementation in African Nature Reserves"
- Garrett Matsuda (Winter–Spring 2019) MMSS Senior Thesis: "Testing User's Willingness to Authenticate their Identity to their Phones"
- Prem Seetharaman (Summer–Fall 2011): "The Hand Clap as an Impulse Source in Measuring Room Acoustics."

MS research projects:

- Yuxiang Guo and Jiayue Sheng (November 2019–present): An Audio Signal Processing System to Detect Gunshots in African Nature Reserves.

MS project and thesis committees:

- Fan Liu (June 2019): "Review of State-of-the-Art Image Restoration Techniques"
- Jie Hu (June 2019): "Performance Analysis of V2V Communication Adopting DSRC for Safety Applications"
- Liu Cao (June 2019): "Simulation and Analysis of Vehicle-To-Vehicle (V2V) Communications"
- Di An (June 2019): "Explanation Generation for Atlasify System"
- Tianqi Liu (June 2019): "A Visual SLAM and Navigation System for Mobile Robot"
- Han Wang (June 2019): "Action Recognition in Compressive Sensing"
- Yizhen Zhang (Winter 2019): "Ensembling Word Embeddings with VecShare"
- Wanxin Xu (Winter 2019): "Statistical Model for Driver Drowsiness Detection Based on Blinking Eyes and Yawn Behavior"
- Yuze Li (Winter 2019): "Interactive Interface for Activity Learning"

GRANTS

Service credit from Amazon Web Services to support CS-396 Scalable Software Services class, September 2019, $9,000.

PUBLICATIONS

452 citations listed on Google Scholar

P. Seetharaman, S. P. Tarzia. The Hand Clap as an Impulse Source for Measuring Room Acoustics. In Proc. Audio Engineering Society 132nd Convention. April 2012.

S. P. Tarzia, P. A. Dinda, R. P. Dick, G. Memik. Indoor Localization Without Infrastructure Using the Acoustic Background Spectrum. In Proc. 9th Intl. Conf. on Mobile Systems, Applications, and Services (MobiSys'11). June 2011. pages 155-168.

S. P. Tarzia, P. A. Dinda, R. P. Dick, G. Memik. Display Power Management Policies in Practice. In Proc. 7th Intl. Conf. on Autonomic Computing and Communications (ICAC'10). June 2010. pages 51-60.

S. P. Tarzia, R. P. Dick, P. A. Dinda, G. Memik. Sonar-based Measurement of User Presence and Attention. In Proc. 11th Intl. Conf. on Ubiquitous Computing (UbiComp'09). September 2009. pages 89-92.

Notable Presentations

Indoor Localization Without Infrastructure Using the Acoustic Background Spectrum. 9th Intl. Conf. on Mobile Systems, Applications, and Services (MobiSys'11). Bethesda, Maryland. June 30, 2011

Display Power Management Policies in Practice. 7th Intl. Conf. on Autonomic Computing and Communications (ICAC'10). Washington, D.C. June 8, 2010

Sonar-based Measurement of User Presence and Attention. Proc. 11th Intl. Conf. on Ubiquitous Computing (UbiComp'09). Orlando, Florida. October 2, 2009

Demos and Posters

S. P. Tarzia, P. A. Dinda, R. P. Dick, G. Memik. Demo: Indoor Localization Without Infrastructure Using the Acoustic Background Spectrum. In Proc. 9th Intl. Conf. on Mobile Systems, Applications, and Services (MobiSys'11). June 2011. pages 385-386.

S. P. Tarzia, R. P. Dick, P. A. Dinda, G. Memik. A Demonstation of Sonar-based Presence Detection. In Suppl. Proc. 11th Intl. Conf. on Ubiquitous Computing (UbiComp'09). September 2009. pages 158-159.

S. P. Tarzia, R. P. Dick, P. A. Dinda, G. Memik. Sonar-Based Measurement of User Attention. Poster presentation at USENIX Annual Technical Conference (USENIX'09). June 2009.

Technical Reports

S. P. Tarzia. Acoustic sensing of location and user presence on mobile computers. Doctoral Dissertation and Technical Report NWU-EECS-11-09, Department of Electrical Engineering and Computer Science, Northwestern University. August 2011.

S. P. Tarzia, R. P. Dick, P. A. Dinda, G. Memik. Prospects for Sonar-based Measurement of User Attentiveness. Technical Report NWU-EECS-09-06, Department of Electrical Engineering and Computer Science, Northwestern University. April 2009.

S. P. Tarzia, H. Zhou, R. P. Dick. Fast Voltage Assignment by Convex-cost Flow. Technical Report NWU-EECS-09-07, Department of Electrical Engineering and Computer Science, Northwestern University. April 2009.

Service to Institution

CS Representative, Northwestern Faculty Senate	October 2019 – present
Faculty Senate Educational Affairs Committee	November 2019 – present
Director of MS Programs in EE and CE	September 2017 – present
CS Diversity Enhancement Committee	2019 – present
CS MS Program Committee	2019 – present
CS Faculty of Instruction and Teaching Postdoc Hiring Committee	2019 – present
CS Undergraduate Curriculum Committee	2019 – present
Coach, International Collegiate Programming Competition	2017 – present
Teaching overload (EECS-317 was added as a fourth course that year)	Spring 2019
Assistant Chair of EECS Department	September 2017 – December 2018
EECS Graduate Committee	September 2017 – December 2018
EECS Undergraduate Recruiting Committee	September 2017 – December 2018
Computer Engineering Undergraduate Curriculum Committee	September 2017 – December 2018

Service to Field

Referee, Journal of Signal Processing Systems	2018
Referee, IEEE Pervasive Computing	2017
Referee, IEEE Transactions on Mobile Computing	2017
Referee, EURASIP Journal on Advances in Signal Processing	2013
Referee, IEEE Transactions on Parallel and Distributed Systems (TPDS)	2010–2011
Referee, IEEE Computer Magazine	2010
Volunteer, Emerging Computational Methods for the Life Sciences Workshop	2010

Session Summarizer, USENIX Annual Technical Conf. (published in login; magazine, Oct. 2009) 2009

Referee, Asia South Pacific Design Automation Conference (ASP-DAC) 2008

Referee, Embedded Systems Week Conference (ESWeek) 2007

Additional Activities

Publisher, National Gun Violence Memorial 2015–present
a crowd-sourced website showing profiles of more than 60,000 gun violence victims since 2014, and including more than 79,000 photos (as of 4/2019).

Far From Equilibrium: A Research Playground. Chicago, Illinois 2016
an interdisciplinary modern dance performance on the theme of turbulence in fluid dynamics. I built several physics demonstrations for an exhibit explored by the audience after the show.

ClapIR iPhone app 2011
demonstrates our room acoustics measurement technique and has been translated into German and Spanish and downloaded more than 12,000 times (as of 9/2017).

Batphone iPhone app 2010
demonstrates the indoor localization method described in my PhD dissertation.

Sonar Power Manager desktop application 2009
demonstrates our sonar technique for turning off a laptop's display when a user is absent. Downloaded more than 10,000 times (as of 1/2010).