

Assoc. Prof. Alexander Iliev, Ph.D.

QUALIFICATION HIGHLIGHTS

- Expert in Python (NumPy, SciPy, Matplotlib, Pandas, Scikit-Learn, TensorFlow), Matlab, Linux, Android
- Patented research that led to commercially sold licenses
- Research experience in Machine Learning, Speech and Audio Signal Processing, Big Data, Data Analytics
- Publication record including journal articles, conference listings and a published monograph
- Industry experience with connected devices, multimedia and internet related technologies
- Teaching at UC Berkeley *School of Information* – (past), and UC Berkeley *Extension* – (current); University of Miami and University of Wisconsin - *Stevens Point* – (past)
- Research at the Bulgarian Academy of Sciences – (current), and University of Miami – (past)
- Committee member at University of Wisconsin - *Stevens Point* (past), University of Miami (past)
- Adviser at University of Wisconsin - *Stevens Point* (past)

EDUCATION

University of Miami, Coral Gables FL, USA

Ph.D. in Electrical and Computer Engineering, 2009, Area: Emotion Recognition in Speech

M.S. in Music Engineering Technology, 1999, Area: Audio Watermarking for DRM and Data Hiding

Ivan Rilski University, Sofia, Bulgaria

M.S. in Electrical Engineering, 1996

Technical University, Sofia, Bulgaria

Associate Degree in Multimedia Technologies, 1996

ACADEMIC EXPERIENCE

SRH Berlin University, Germany

Professor, Nov.2019 – current

- Teaching Machine Learning and Programming for the Big Data and Cyber Security programs

University of California Berkeley CA, USA

Lecturer at Berkeley Global and the Extension, Sep.2012 – current

- Teaching Python programming and Machine Learning courses in the Data Science program

Lecturer at School of Information, Aug.2018 – July.2019

- Teaching Machine Learning for the Master in Data Science program (MIDS)

Bulgarian Academy of Sciences, Bulgaria

Associate Professor at Software Engineering and Information Systems Department, Nov.2014 – current

- Research in the Smart Systems through Speech and Audio Signals area
- Applying Python and Android Development for practical scientific applications

University of Wisconsin Stevens Point WI, USA

Assistant Professor at Computing and New Media Technologies Department, Sep.2017 – Jan.2019

- Teaching various courses in the Data Analytics program
- Research in Personalization using Speech and Audio Signals related to Big Data Analytics
- Academic advisor

University of Miami, Coral Gables FL, USA

Software Engineer, Jul. 1998 – Jun. 2010

- Research in Digital Right Management (DRM) field using Audio Watermarking
- Research in Emotion Recognition in Digital Speech
- Designed C++ based application for parsing and compiling of novel programming platform

BUSINESS EXPERIENCE

Labcyte, San Jose, CA, USA

Python consultant, Lecturer, Apr.2019

Time Warner – bTV, Bulgaria

VP/Director of Internet Business Unit, Nov.2012 – July.2014

SONY - Gracenote, Emeryville CA, USA

Product Manager, July. 2010 – April.2012

Stealth Media Labs, Chicago IL, USA

Consulting Scientist, Aug. 2001 – Sep. 2002

- Contributed in product development based on research titled “Auxiliary Channel Masking Based on the Joint Stereo Encoding of the Short-Time Phase Spectrum of Audio Signals”
- Actively involved in strategy improvement decisions directly impacting product development

PATENTS

- “Coding a Masked Data Channel in a Radio Signal” Inventors: A.I. Iliev, M. S. Scordilis and H. Leventhal, U.S. Patent No. 7,079,633 B2, awarded on July 18, 2006
- “Auxiliary channel masking in an audio signal”, U.S. Patent No. 6,996,521 B2, Inventors: A.I. Iliev and M. S. Scordilis, Assignee: University of Miami, awarded on February 07, 2006

RESEARCH EXPERIENCE

- Recommendation, Personalization, and Enhanced User Experience for Digital Media Management
- Smart Content Ecosystems through Behavioral Patterns
- Emotion Recognition In Speech Using Glottal Information And Prosodic Features
- Watermarking And Data Hiding Using Speech And Audio Signals Based On Psychoacoustic Modeling
- Machine Learning, Data Analysis, Digital Signal Processing, Psychoacoustics, Speech And Audio Signals

PUBLICATIONS

1. Alexander I. Iliev and Peter L. Stanchev, “Smart Ecosystems through Voice and Images”, Proceedings of 35th International Conference on Computers and Their Applications, CATA 2020, EPiC Series in Computing Vol. 69, pp. 256-263
2. Iliev, A.I., Ignatova D., “Correlation Between The Physical Development And The General Health Of Children”, Education and Knowledge, Sofia, Bulgaria, Issue 6, ISSN: 2603-2864, pp.3-12, December 2019
3. Iliev, A.I., Ignatova D., “Motor Activity And Emotional Resistance Investigation In 7-10 Year Old Children”, Ninth International Autumn Science and Education Forum "The Modern Teacher and the Challenges of the Information Society", Sofia, 15-16 November 2019
4. Iliev, A.I. 2018. “Content Discovery Using Perceptual Automation”, In Proceedings of the 10th International Conference on Management of Digital EcoSystems (MEDES’18), September 25–28, 2018, Tokyo, Japan. ACM, New York, NY, USA, pp. 233-238, ISBN: 978-1-4503-5622-0, DOI: 10.1145/3281375.3281399
5. Alexander I. Iliev and Peter L. Stanchev, Glottal Attributes Extracted from Speech with Application to Emotion Driven Smart Systems, in Proceedings of the 10th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management (IC3K 2018) - Volume 1: KDIR, pages 297-302 ISBN: 978-989-758-330-8, indexed in Thomson Reuters, Seville, Spain, 18-20 September 2018
6. Iliev, A.I., Stanchev, L.P., *Information Retrieval and Recommendation Using Emotion from Speech Signal*, In: 2018 IEEE Conference on Multimedia Information Processing and Retrieval, Miami, FL, USA, April 10-12, 2018, pp. 222-225, DOI:10.1109/MIPR.2018.00054
7. Marinova, D.P., Iliev, A.I., Pavlov, R.D., Zlatkov, L.Ch., “Towards Increasing and Personalizing of User Experience in the Digital Culture Ecosystem”, International Journal of Applied Engineering Research, ISSN 0973-4562 Volume 13, Number 6 (2018) pp. 4227-4231
8. Stanchev, P.L., Marinova, D.P., Iliev, A.I., “Enhanced User Experience and Behavioral Patterns for Digital Cultural Ecosystems”, The 9th International Conference on Management of Digital EcoSystems (MEDES’17), Bangkok, Thailand, 7-10.Nov.2017, indexed in ACM, ISBN:978-1-4503-4895-9, pp. 288-293
9. Iliev, A.I., Stanchev, P.L., “Smart multifunctional digital content ecosystem using emotion analysis of voice”, 18th International Conference on Computer Systems and Technologies CompSysTech’17, Ruse, Bulgaria – June.22-24.2017, ACM, ISBN 978-1-4503-5234-5, Volume 1369, pp.58-64, ISBN: 978-1-4503-5234-5
10. Iliev, A.I., Stanchev, P., “Personalizing content using voice in a digital asset ecosystem”, IJIRSET International Journal of Innovative Research in Science, Engineering and Technology, Vol. 5, Issue 12, pp. 20260-20267, December 2016
11. Iliev, A.I., “Emotion Recognition in Speech using Inter-Sentence Time-Domain Statistics”, IJIRSET International Journal of Innovative Research in Science, Engineering and Technology, Vol. 5, Issue 3, pp. 3245-3254, March 2016
12. Iliev, A.I., “Feature vectors for emotion recognition in speech”, National Informatics Conference, Sofia, Bulgaria, 2016, pp. 225-238
13. Iliev, A.I., “Emotion Recognition From Speech”, Monograph, Lambert Academic Publishing, 2012
14. Iliev, A.I., Scordilis, M.S., “Spoken Emotion Recognition Using Glottal Symmetry”, EURASIP Journal on Advances in Signal Processing, Volume 2011, Article ID 624575, ISSN: 1687-6180
15. Iliev, A.I., Scordilis, M.S., Papa J.P., Falcão A.X., “Spoken emotion recognition through optimum-path forest classification using glottal features”, Journal on Computer Speech and Language, ELSEVIER, Vol. 24, Issue 3, 2010, pp. 445-460, ISSN: 0885-2308
16. Iliev, A.I., Scordilis, M.S., “Emotion Recognition in Speech using Inter-Sentence Glottal Statistics”, Proceedings of the 15th International Conference on systems, Signals and Image Processing, IEEE-IWSSIP 2008, Bratislava, Slovakia, June 25-28, 2008, pp. 465-468
17. Iliev, A.I., Zhang, Y., Scordilis, M.S., “Spoken Emotion Classification Using ToBI Features and GMM”, Proceedings of the 14th International Workshop on Signals and Image Processing 2007 and the 6th EURASIP Conference focused on Speech and Image Processing, Multimedia Communications and Services. IEEE-IWSSIP 2007, Maribor, Slovenia, June 27-30, 2007, pp. 495-498, ISSN: 16874722, 16874714

18. Iliev, A.I., He, X., Scordilis, M.S., "A High Capacity Watermarking Technique for Stereo Audio", Proceedings of the IEEE International Conference on Acoustics Speech and Signal Processing, ICASSP2004, Montreal, Canada, 17-24 May 2004, Vol. 5, pp. 393-396, ISBN: 0-7803-8484-9, ISSN: 0736-7791
19. Iliev, A.I., Scordilis, M.S., "Multi level High Capacity Data Hiding Technique for Stereo Audio", Proceedings of the 2004 IEEE-Asilomar Conference, Pacific Grove, California, November 7-10, 2004, pp. 1793-1797, ISBN: 0-7803-8622-1, ISSN: 1058-6393
20. Jin, W., Scordilis, M.S., Iliev, A.I., "Comparison and implementation of a 16-bit fixed point audio resampler", Proceedings of the 2004 IEEE-Asilomar Conference, Pacific Grove, California, November 7-10, 2004, pp. 1798-1800, ISBN: 0-7803-8622-1
21. Iliev, A.I., Scordilis, M.S., "Binaural Phase Masking Experiments in Stereo Audio", Proceedings of the First Pan-American/Iberian Meeting on Acoustics, Cancun, Mexico, The Journal of the Acoustical Society of America, Nov.01.2002, Vol.112, Issue 5, pp. 2273-2274

EDITORIAL RESPONSIBILITIES

- Grant Reviewer for NSERC Discovery Grants – Extranet, Electrical and Computer Engineering (EG 1510), Government of Canada – Jan.2019
- IEEE Signal Processing Letters: Speech Coding, Synthesis and Analysis; Speech Processing "Characterization of Glottal Activity from Speech Signals", Volume: 16, Issue: 6, pages: 469 – 472, ISSN: 1070-9908, June 2009
- EURASIP Journal on Advances in Signal Processing, "Recognition of Non-Prototypical Emotions in Reverberated and Noisy Speech by Non-Negative Matrix Factorization", 16 pages, Article ID 838790, January 23, Volume 2011
- APESM Australasian Physical & Engineering Sciences in Medicine, "Study of Bispectral features and Mean shift clustering for stress and emotion classification from natural speech", Manuscript APES-D-15-00271, 39 pages, 2016
- JITR Journal of Information Technology Research, "Factors for the management of scarce human resources and highly skilled employees", 22 pages, January 2016

GRANTS

UW Stevens Point WI, USA

- Principal Investigator - Startup Grant, 2017: for research related to Cluster Computing
- Enhancement Grant, 2018: Raspberry Pi Cluster for Computer Information Systems and Data Analytics

Bulgarian Academy of Sciences, Bulgaria

- Erasmus+, 2016-19: mobility grant for teaching

TEACHING EXPERIENCE

Lecturer, University of California Berkeley, CA, USA, Sep.2012 – current

- Introduction to Matlab (EL-ENG-X446.7), *Sep.2012, June.2014, March.2015*
- Python for Data Analysis and Scientific Programming (EL-ENG-X446.7), *2015 – current*
- TensorFlow for Machine Learning, *May.2018 – current*
- *Applied Machine Learning (W207) Sep.2018 / May.2019*

Assistant Professor, University of Wisconsin – Stevens Point WI, USA, Sep.2017 – Jan.2019

- Programming for Data Analytics (DAC-111) | Introduction to Data Analytics (DAC-101)
- Android Development (CIS/HTI-345) | Data Analytics Seminar (DAC-299)
- Data Mining (DAC-310) | Machine Learning (CIS-345)
- Web Development I (CNMT-210)

Lecturer, College of Engineering, University of Miami, FL, USA, 2006

- Architectural Acoustics (CAE380)

Lecturer, School of Communication, University of Miami, FL, USA, 2002 – 2005

- Advanced Audio Production for Film and Video (CMP594)
- Advised, coordinated, and supervised graduate and undergraduate level students as thesis committee member

FELLOWSHIPS HONORS AWARDS

- Best paper award "Crystal Cube Prize The Best Paper" at the 18th International Conference on Computer Systems and Technologies CompSysTech'17, Ruse, Bulgaria, *June.22-24.2017*
- Fellowship from the Provost at University of Miami, *May.2006*
- Honor Society "Eta Kappa Nu", *Nov.2006*
- Senator of the Graduate Student Association, *2007-2009*
- Best Attendance Award at UM, 1st: *Jun-Dec.2003*; 2nd: *Jan-Jun.2004*
- Audio Engineering Society (AES) Educational Foundation Stipend, *Jul.1998-1999*

SERVICE

COMMITTEES

University of Miami, 2002 – 2005

- Thesis Committee at School of Communication
University of Wisconsin - Stevens Point, Sep.2017 – Jan.2019
- Awards and Scholarships Committee Chair
- Committees: CNMT Department, Curriculum, Marketing, Library, Seminar groups
- Student advising

PUBLIC

Community Lecture Series, Portage County Public Library at Stevens Point – Feb.12.2018

Wausau Police Department, providing data analysis and solutions – Fall'2017

PROFESSIONAL SOCIETIES

- IEEE (2008)
- Acoustical Society of America (2002)
- Audio Engineering Society (1997)
- Project Management Institute (2007)

LANGUAGES

- Fluent in English, Native Bulgarian speaker, Working knowledge of Russian and Spanish

ACTIVITIES

- Climber (Mount Kilimanjaro, Mont Blanc, Mount Elbrus, Mount Whitney)
- Rescue Scuba Diver: NAUI and PADI Certified

ADDITIONAL INFO:

- ORCID: orcid.org/0000-0002-4220-3637
- Scopus Author ID: 57207799868
- Web of Science ID: R-4527-2016
- Google Scholar: Alexander Iliev
- ResearchGate: [Alexander Iliev Iliev](#)
- LinkedIn: [Alexander Iliev](#)