

CURRICULUM VITAE

Cristian Axenie



PERSONAL INFORMATION

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Citizenship	Romanian
Date of birth	14 th of April 1986

ACADEMIC RECORD AND QUALIFICATIONS

as of October 2017	Head of AKII Microlab (Artificial Intelligence and Virtual Reality) at the AUDI Konfuzius Institute Ingolstadt, Ingolstadt, Germany
	Lecturer in Artificial Intelligence and Machine Learning at the Technical University of Ingolstadt, Germany
	Deep Learning Technical Adviser for Schanzer Racing Electric (SRE) team at Technical University of Ingolstadt.
as of July 2017	AI and ML Technical Adviser for various startups.
as of April 2017	Senior Research Engineer in Machine Learning and Big Data, Huawei European Research Center, Munich, Germany
2016 - 2017	Postdoctoral Researcher at Neuroscientific System Theory Group Neuroengineering Competence Center, Technische Universität München, Germany
2011 - 2016	Ph.D. in Neuroscience and Robotics (Summa cum Laude) Dept. Electrical and Computer Engineering, Technische Universität München, Germany

2009 - 2011 **M.Sc.** in Advanced Control Engineering and Robotics (**top 1%**)
Electrical and Electronics Engineering Faculty,
Dunărea de Jos University (UGAL), Galați, Romania

2005 - 2009 **B.Sc.** in Automation and Industrial Informatics (**top 1%**)
Computer Science Faculty,
Dunărea de Jos University (UGAL), Galați, Romania

RECOGNITIONS AND ACHIEVEMENTS

- April 2018 **Awarded the nVidia GPU Grant** for a Neuromorphic Processing for Electric Autonomous Driving with Schanzer Racing Electric (SRE) team at Technical University of Ingolstadt.
- January 2017 **Media coverage in Microsoft Faculty Connection** for project demo at University of Cambridge Hackaton 2017 on Neural Computation for vision based elderly and seniors monitoring using MS Azure API.
- January 2017 **Awarded a BayIntAn Fellowship (5000 EUR)** by the Bavarian Research Alliance for establishing a cooperation on the development of a platform for neuromorphic models of sensorimotor adaptation with ETH Zurich and University of California, Irvine
- July 2016 **Awarded a BayIntAn Fellowship (10000EUR)** by the Bavarian Research Alliance for establishing a cooperation on neurorobotics with University of Waterloo, Canada and the University of Manchester, UK.
- June 2016 **Media coverage in Wired** about work on neuromorphic computation for visual rehabilitation at **Hack the Senses** contest in London, UK.
- April 2016 **Awarded 1st prize** at the **Daimler Automotive Big Data Analytics Hackaton** for the design of a neurofuzzy learning system for adaptive anomaly detection.
- April 2016 **Awarded special Microsoft Cognitive Technologies prize at the Burda Hackdays** for the development of a neural learning system for psychometric data analytics.
- March 2016 **Awarded 1st prize (5000EUR)** in the **BMW Automotive Hackdays** for the development of an artificial intelligence learning agent for predictive maintenance.
- July 2013 **Awarded Research Fellowship (2500EUR)** by the Science Network of Biomimetic and Biohybrid Systems for leading a workgroup at the Telluride Neuromorphic Cognition Engineering Workshop, USA.
- May 2013 **Awarded Research Fellowship (2500EUR)** by the Science Network of Biomimetic and Biohybrid Systems for leading a workgroup at the CapoCaccia Cognitive Neuromorphic Engineering Workshop, Italy.
- April 2013 **Awarded a Leonhard Lorenz-Stiftung Fellowship (7000EUR)** for novel ideas in neurotechnologies research.
- April 2012 **Awarded a Bavarian Elite Research PhD Scholarship (3 years funding, ~120.000EUR)** by the Bavarian Ministry of Sciences, Research and the Arts.

WORK AND TEACHING EXPERIENCE

- October 2017 - present **Lecturer** in **Artificial Intelligence and Machine Learning** at **TU Ingolstadt**.
- October 2011 - 2017 **Teaching assistant** in Computational Intelligence at **TU Munich**.
- July 2009 - July 2011 **Software engineer** in embedded Linux development at **Intel**.
- October 2009 - September 2011 **Teaching assistant** in Programming (OOP, Assembly Languages, and Digital Signal Processors) at **UGAL**.
- July - October 2008 **Software engineer** in multi-core Digital Signal Processors (DSP) compiler development at **Freescale Semiconductor (NXP)**.

VARIA

- as of 1992 Fanatic sportsman: from soccer to basketball, from biking to long distance running, and from greco-roman wrestling to rock climbing.
- as of 1991 Passionate bookworm: from Isaac Asimov to Nietzsche, from Dostoyevski's realism to Kafka's metamorphosis, and from Jung's Red Book to Kandel's Principles of Neural Science.

REFERENCES

Prof. Jörg Conradt

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Prof. Jeffrey L. Krichmar

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Dr. Cristina Segal

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Former supervisor and professor
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PUBLICATIONS

2018

C. **Axenie**, R. Tudoran et al., Online Machine Learning at Scale: A System for Low-latency High-throughput Incremental Learning on Data Streams, IEEE ICMLA2018. (submitted)

D. Foroni, C. **Axenie** et al., Moira: A Goal-Oriented Incremental Machine Learning Approach to Dynamic Resource Cost Estimation in Distributed Stream Processing System, Twelfth International Workshop on Real-Time Business Intelligence and Analytics, VLDB2018.

I. Sugiarto, C. **Axenie**, J. Conradt, FPGA-based Hardware Accelerator for an Embedded Factor Graph with Configurable Optimization, Journal of Circuits, Systems and Computers, 2018. (PDF)

F. Mirus, C. **Axenie**, T. C. Stewart, J. Conradt, Neuromorphic Sensorimotor Adaptation for Robotic Mobile Manipulation: From Sensing to Behaviour, Cognitive Systems Research, 2018. (PDF)

2017

C. **Axenie**, C. Richter, J. Conradt, A Self-Synthesis Approach to Perceptual Learning for Multisensory Fusion in Robotics, Sensors 16(10) 1751, 2017. (PDF)

2016

I. Sugiarto, C. **Axenie**, J. Conradt, From Adaptive Reasoning to Cognitive Factory: Bringing Cognitive Intelligence to Manufacturing Technology, International Journal of Industrial Research and Applied Engineering, 2016. (PDF)

C. **Axenie**, C. Richter, J. Conradt, Neuromorphic models of sensorimotor adaptation and learning, Bernstein Conf. on Comp. Neuroscience, Berlin, 2016. (PDF)

2015

C. **Axenie**, C. Richter, M. Firouzi, J. Conradt, Synthesis of Distributed Cognitive Systems: An Approach to Learning Multisensory Fusion, Bernstein Conf. on Comp. Neuroscience, Heidelberg, 2015. (PDF)

C. **Axenie**, J. Conradt, Learning Sensory Correlations for 3D Egomotion Estimation, Springer LNCS in Biomimetic and Biohybrid Systems, pp. 329-338, 2015. (PDF)

I. Susnea, C. **Axenie**, Cognitive Maps for Indirect Coordination of Intelligent Agents, Studies in Informatics and Control Vol. 24, 2015. (PDF)

2014

C. **Axenie**, M. Firouzi, M. Mulas, J. Conradt, Multimodal sensor fusion for mobile robot egomotion estimation, Bernstein Conf. on Comp. Neuroscience, Göttingen, 2014. (PDF)

C. **Axenie**, J. Conradt, A model for development and emergence in multisensory integration, Bernstein Conf. on Computational Neuroscience, Göttingen, 2014. (PDF)

M. Firouzi, C. **Axenie**, J. Conradt, Multi-sensory cue integration with reliability encoding, using Line Attractor Dynamics, searching for optimality, Bernstein Conf. on Comp. Neuroscience, Göttingen, 2014. (PDF)

C. **Axenie**, J. Conradt, Cortically inspired sensor fusion network for mobile robot egomotion estimation, Robotics and Autonomous Systems, 2014. (PDF)

2013

C. **Axenie**, M. Firouzi, J. Conradt, Multisensory Integration Network for Mobile Robot Self-motion Estimation, Bernstein Conf. on Comp. Neuroscience, Tübingen, 2013. (PDF)

C. **Axenie**, J. Conradt, Cortically Inspired Sensor Fusion Network for Mobile Robot Heading Estimation, Intl Conf. on Artificial Neural Networks, 2013, pp. 240-47. (PDF)

2012

C. **Axenie**, J. Conradt, Synthesis of Distributed Cognitive Systems: Interacting Maps for Sensor Fusion, Bernstein Conference on Computational Neuroscience, München, 2012. (PDF)

2010

C. **Axenie**, R. Solea, Real time control design for mobile robot fault tolerant control. Introducing the ARTEMIC powered mobile robot, Mechatronics and Embedded Systems and Applications (MESA), 2010 IEEE/ASME Intl. Conf. on, 2010, pp. 7 -13. (PDF)

C. **Axenie**, D. Cernega, Adaptive sliding mode controller design for mobile robot fault tolerant control, Robotics in Alpe-Adria-Danube Region (RAAD), 2010 IEEE 19th International Workshop on, 2010, pp. 253-59. (PDF)

C. **Axenie**, "Mobile Robot Fault Tolerant Control. Introducing ARTEMIC." In the 9th International Conference on Signal Processing, Robotics and Automation Conference, University of Cambridge, UK, February, 2010. (PDF)

C. **Axenie**, Cernega Daniela, "Mobile Robot Fault Tolerant Control", IEEE/IACSIT ICIEE 2010 (International Conference on Information and Electronics Engineering), Shanghai, China, June 2010. (PDF)

C. **Axenie**, "A New Approach in Mobile Robot Fault Tolerant Control. Minimizing Costs and Extending Functionality", Included in ISI / SCI (Web of Science) WSEAS TRANSACTIONS ON SYSTEMS AND CONTROL, 2010. (PDF)

2007

Axenie Cristian, Stancu Alexandru, Zanoschi Aurelian, Pascalini Andrei, Perjeru Marius, Maftei Florentina, A Client-Server Based Real-Time Control Tool for Complex Distributed Systems, Proc. of 9th Real-Time Linux Workshop, Linz, Austria, November, 2007. (PDF)

PATENTS

- 2017 Cristian Axenie et al., Stream Feature Extractor, 85379618.
- 2018 Cristian Axenie et al., A System for Higher-Order Stream Processing, 85664017.
Cristian Axenie et al., Streaming Random Forest, 85680025.