

# Nikos Kargas

## Curriculum Vitæ

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### Education

- 2015–present **Ph.D. in Electrical Engineering**, *University of Minnesota*, Minneapolis MN.  
PhD Advisor: Prof. Nikolaos Sidiropoulos.
- Aug. 2015 **Master of Science**, *Technical University of Crete*, Chania, Greece.  
Thesis: SDR Readers for Gen2 RFID and Backscatter Sensor Networks.  
MSc Advisor: Associate Prof. Aggelos Bletsas.
- Sept. 2013 **Diploma of Engineering**, *Technical University of Crete*, Chania, Greece.  
Thesis: Robust Localization for the RoboCup Standard Platform League.  
Thesis Supervisor: Associate Prof. Michail G. Lagoudakis.

### Research Interests

- Matrix/Tensor Factorization Models
- Machine Learning
- Optimization

### Experience

- 2015–Now **Research Assistant**, *University of Minnesota*.  
Latent Variable Modeling using Tensor Factorization.
- 2013–2015 **Research Assistant**, *Technical University of Crete*.  
ERC-04-BLASE Research Project:  
“Backscatter Networks for Large-Scale Environmental Sensing”.
- Fall 2014 **Teaching Assistant**, *Technical University of Crete*.  
Analysis & Design (Synthesis) of Telecom Modules.
- Spring 2013 **Teaching Assistant**, *Technical University of Crete*.  
Telecommunication Systems II.

### Publications

#### Journals

- [J2] **N. Kargas**, N.D. Sidiropoulos, and X. Fu, “Tensors, Learning, and ‘Kolmogorov Extension’ for Finite-alphabet Random Vectors”, arXiv preprint arXiv:1712.00205 (2017) (submitted).
- [J1] **N. Kargas**, F. Mavromatis and A. Bletsas, “Fully-Coherent Reader with Commodity SDR for Gen2 FM0 and Computational RFID”, *IEEE Wireless Communications Letters (WCL)*, Vol. 4, No. 6, pp. 617-620, Dec. 2015.

## Conference Publications

- [C5] B. Yaman, S. Weingartner, **N. Kargas**, N.D. Sidiropoulos, and Mehmet Akcakaya, "Locally Low-Rank Tensor Regularization for High-Resolution Quantitative Dynamic MRI", in Proc. IEEE CAMSAP, Dec. 2017
- [C4] **N. Kargas**, S. Weingartner, N.D. Sidiropoulos, and M. Akcakaya, "Low-Rank Tensor Regularization for Improved Dynamic Quantitative Magnetic Resonance Imaging", in Proc. SPARS, June 2017.
- [C3] **N. Kargas** and N.D. Sidiropoulos, "Completing a Joint PMF from Projections: a Low-rank Coupled Tensor Factorization Approach", in Proc. IEEE ITA, Feb. 2017.
- [C2] P. N. Alevizos, N. Fasarakis-Hilliard, K. Tountas, N. Agadakos, **N. Kargas** and A. Bletsas. "Channel Coding for Increased Range Bistatic Backscatter Radio: Experimental Results", in *IEEE RFID-TA*, Sept. 2014.
- [C1] **N. Kargas**, N. Kofinas, E. Michelioudakis, N. Pavlakis, S. Piperakis, N. I. Spanoudakis, M. G. Lagoudakis. "Kouretes 2013 SPL Team Description Paper", *e-Proceedings of the 17th RoboCup International Symposium*, June 2013.

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## Technical Skills

- **Programming:** C/C++, Java, Python, MapReduce (Hadoop), Assembly, VHDL.
- **Embedded Systems:** MCU (Silabs 8051), Software Defined Radio (NI USRP).
- **Environments and Tools:** Git, Mathworks MATLAB, Microsoft Visual Studio, Eclipse IDE.

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## Software

- Gen2 UHF RFID Reader, developed in the context of my MSc thesis:  
<https://github.com/nikos121/Gen2-UHF-RFID-Reader>

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## Graduate Coursework

### University of Minnesota

*Probability and Stochastic Processes, Computational Aspects of Matrix Theory, Introduction to Nonlinear Optimization, Optimization Theory, Tensor Decomposition for Signal Processing and Machine Learning, Stochastic Processes and Queuing Systems, Advanced Algorithms and Data Structures, Detection and Estimation Theory, Introduction to Data Mining, Optimization.*

### Technical University of Crete

*Detection and Estimation Theory, Advanced Topics in Convex Optimization, Processing and Analyzing Big Data (audit), Machine Learning, Probabilistic Graphical Models & Inference Algorithms.*

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## Languages

- English Excellent. Michigan Certificate of Proficiency in English.
- German Good. Goethe-Institut Zertifikat B1.
- Greek Native Speaker