

# GOKHAN CALIS

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## EDUCATION

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- The University of Arizona**, Tucson, AZ Aug. 2013 - Aug. 2017 (Expected)  
Ph.D. in Electrical and Computer Engineering, Minor in Mathematics
- Bilkent University**, Ankara, Turkey Sep. 2011 - Jul. 2013  
M.S. in Electrical and Electronics Engineering
- Bilkent University**, Ankara, Turkey Sep. 2006 - Jun. 2011  
B.S. in Electrical and Electronics Engineering

## EXPERIENCE

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- Huawei Technologies**, Santa Clara, CA May 2017 - Present  
*Visiting Machine Learning Engineer*
- Research on machine learning methods to estimate characteristics of network traffic in datacenters.
  - Setting up a Spark cluster with Hadoop to perform tests with bigdata.
- The University of Arizona**, Tucson, AZ Aug. 2013 - Present  
*Graduate Research Assistant*
- Research in the areas of information and coding theory, distributed storage systems, machine learning and security.
  - Led time series prediction project where computational neuroscience techniques (STDP learning) are applied.
  - Research on cloud storage systems in terms of developing coding techniques for efficient maintenance of data under different failure models and analysis of maintenance of data in both wireless cloud storage and cloud storage with backup.
  - 3 conference and 1 journal publications, and 2 conference and 2 journal submissions under review.
- BOSCH Research and Technology Center**, Palo Alto, CA May 2015 - Aug. 2015  
*Data Mining Research Intern*
- Research in time series event prediction. Main goal was to find dependencies between different labels in time series data and forecasting future events. Created a web page that details different time series event prediction algorithms.
  - Implemented Piecewise-constant Conditional Intensity Model (PCIM) in MATLAB for use cases. The model assumes closed-form Bayesian approach to learning and represents each label with a decision tree.
- Bilkent University**, Ankara, Turkey Sep. 2011 - Jul. 2013  
*Research and Teaching Assistant*
- Research in the areas of network measurement, modeling and queuing system analysis. Developed a tool to analyze networks with round-robin scheduling using active queue management. Performed simulations in MATLAB and NS-3.
  - Teaching in 3 courses: Wireless Networking, Microprocessors, Circuit Theory.

## PROJECTS

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- **Network Traffic Estimation:** Implemented various estimation algorithms proposed for network traffic in datacenters in Python. Performing research on neural networks and other time series estimation methods to develop better algorithms.
- **Time Series Prediction:** Performed research on STDP learning and spiking neural networks (SNN) for time series event prediction. Implemented SNN in Python. Mentored 3 graduate students.
- **Coding for Cloud Storage:** Developed codes for cloud storage which can recover from correlated failures of multiple storage units. Developed maintenance strategies for coded-cloud storage over wireless devices. Performed maintenance analysis of hybrid coded-cloud storage (including both backup and storage nodes). Used MATLAB for various simulations.

## SELECTED COURSEWORK

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- **Graduate Level:** Statistical Machine Learning, Applications of Machine Learning and Data Analytics, Advanced Statistical Regression, Information Theory, Detection and Estimation, Channel Coding, Wireless Protocols, Real Analysis, Applied Stochastic Process, Digital Communications, Advanced Signal Processing, Wireless Communications, Communication Network Analysis, Internet Architecture and Protocols, Linear Systems, Random Processes, Queuing Systems.
- **Undergraduate Level:** Algorithms and Programming, Linear Algebra, Probability, Signals and Systems, Control Systems, Digital Signal Processing, Computer Networks, Telecommunications I-II, Neural Networks, Wireless Networking.

## HONORS AND AWARDS

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- Graduate Fellowship Award by The University of Arizona (includes tuition waiver and stipend).
- University Fellowship Award by the Graduate School of Bilkent University (includes tuition waiver, stipend and housing).
- Full Undergraduate Scholarship by Bilkent University (includes tuition waiver, stipend and housing).
- Ranked 143rd in the National University Entrance Exam of Turkey (~1.5 million students).

## COMPUTER SKILLS

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- MATLAB (advanced), Python (NumPy, SciPy, Pandas, TensorFlow, Keras) (intermediate), Java (intermediate), R (intermediate), Hadoop (basic), Spark (basic), SQL (basic), Electronic Circuit Design Tools, L<sup>A</sup>T<sub>E</sub>X, Microsoft Office.