

# Utku Sirin

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School of Computer and Communication Sciences (IC),  
École Polytechnique Fédérale de Lausanne (EPFL)  
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## RESEARCH INTERESTS

High-performance database management systems, modern micro-architectures, hardware-software co-design

## PROFESSIONAL EXPERIENCE

2014 – now    École Polytechnique Fédérale de Lausanne (EPFL)    Lausanne, Switzerland  
Research and Teaching Assistant, advised by Prof. Anastasia Ailamaki

06 – 08/2017    Microsoft Research (MSR)    Redmond, WA, USA  
Research Intern at Data Management, Exploration and Mining (DMX) Group

2011 – 2013    Middle East Technical University (METU)    Ankara, Turkey  
Research and Teaching Assistant, advised by Prof. Faruk Polat

## HONORS & AWARDS:

- Swiss National Science Foundation (SNSF) Postdoc Fellowship, 2020
- Teaching assistant award by IC, EPFL, 2019
- Best paper award at DaMoN@SIGMOD, 2017
- ACM SIGMOD Student Research Competition (SRC), Winner, 2017
- Microsoft Research PhD scholarship, 2017
- Doctoral degree fellowship by IC, EPFL, 2014
- Ranked 1<sup>st</sup> in M.Sc. program, GPA: 4.00/4.00, 2013
- Ranked 1<sup>st</sup> in B.Sc. program, GPA: 3.94/4.00, 2011
- Master's degree fellowship by Sci. and Tech. Research Council (TUBITAK), 2012 – 2013
- Bachelor's degree fellowship by The Credits and Housing Board (KYK), 2006 – 2011
- Bachelor's degree fellowship by METU Development Foundation, 2006 – 2011
- Ranked 29<sup>th</sup> out of ~1.5 million students in nation-wide university entrance exam, 2006

## EDUCATION

**2014 – now:    Doctoral student**    EPFL, Switzerland  
Thesis: Micro-architectural Analysis of Database Workloads

**2011 – 2013:    M.Sc. in Computer Engineering**    METU, Turkey  
Graduation rank: 1, Grade: 4.00 / 4.00  
Thesis: Batch-mode Reinforcement Learning for Controlling Gene Regulatory Networks and Multi-model Gene Expression Data Enrichment Framework

**2006 – 2011:    B.Sc. in Computer Engineering**    METU, Turkey  
Graduation rank: 1 / 103, Grade: 3.94 / 4.00

## PUBLICATIONS

- Utku Sirin, Pinar Tözün, Danica Porobic, Ahmad Yasin, Anastasia Ailamaki: Micro-architectural Analysis of In-memory OLTP: Revisited. In **VLDB J.**, 2021 (To appear).
- Utku Sirin, Sandhya Dwarkadas, Anastasia Ailamaki: Performance Characterization of HTAP Workloads. In **ICDE**, 2021 (6-page short paper).
- Utku Sirin, Sandhya Dwarkadas, Anastasia Ailamaki: Workload Interference Analysis for HTAP. In **CIDR**, 2021 (1-page abstract).
- Utku Sirin, Anastasia Ailamaki: Micro-architectural Analysis of OLAP: Limitations and Opportunities. **PVLDB** 13(6): 840-853, 2020.
- Anisa LLaveshi, Utku Sirin, Robert West, Anastasia Ailamaki: Accelerating B+tree Search by Using Simple Machine Learning Techniques. In **AIDB@VLDB**, 2019.
- Utku Sirin: Energy-efficient Database Machines. In **SIGMOD SRC**, 2017 (2-page abstract).
- Utku Sirin, Ahmad Yasin, Anastasia Ailamaki: A Methodology for OLTP Micro-architectural Analysis. In **DaMoN@SIGMOD**, 2017 (Best paper award).
- Utku Sirin, Raja Appuswamy, Anastasia Ailamaki: OLTP On A Server-grade ARM: Power, Throughput and Latency Comparison. In **DaMoN@SIGMOD**, 2016.
- Utku Sirin, Pinar Tözün, Danica Porobic, Anastasia Ailamaki: Micro-architectural Analysis of In-memory OLTP. In **SIGMOD**, 2016.
- Utku Sirin: OLTP's Core Cycles: What is "Performance Optimization"? In **HPTS**, 2015 (5-min talk).
- Utku Sirin, Faruk Polat, Reda Alhajj: Batch Mode TD( $\lambda$ ) for Controlling Partially Observable Gene Regulatory Networks. In **IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB)**, vol. 14, no. 6, pp. 1214-1227 (2015)
- Utku Sirin, Utku Erdogan, Faruk Polat, Mehmet Tan, Reda Alhajj: Effective Gene Expression Data Generation Framework Based on Multi-model Approach. **Artificial Intelligence in Medicine (AIIM)**, 70:41-61 (2014)
- Utku Sirin, Faruk Polat, Reda Alhajj: Employing Batch Reinforcement Learning to Control Gene Regulation Without Explicitly Constructing Gene Regulatory Networks. In **IJCAI**, 2013.
- Utku Sirin, Utku Erdogan, Mehmet Tan, Faruk Polat, Reda Alhajj: Effective Enrichment of Gene Expression Data Sets. In **ICMLA**, 2012.
- Utku Sirin, Ruket Çakici, Deniz Zeyrek: METU Turkish Discourse Bank Browser. In **LREC**, 2012.

## TEACHING ASSISTANTSHIPS

- Spring 2016 – 2020: Introduction to Database Systems by Prof. Anastasia Ailamaki
- Fall 2019: Machine Learning for Database Systems by Prof. Anastasia Ailamaki, and Prof. Christoph Koch
- Fall 2018 – 2020: Computer Networks by Prof. Katerina Argyraki
- Fall 2017: Applied Data Analysis by Prof. Robert West
- Fall 2016: Introduction to Multiprocessor Architecture by Prof. Dionisios Pnevmatikatos

## LANGUAGES

Turkish – Native, English – Fluent, French – Beginner

## VOLUNTEERING

- Mentor at GirlsCoding organization: <http://girlscoding.org/>
- LauzHack 2020 against COVID-19: <http://tiny.cc/zk9nmz>

## HOBBIES

- Acting. At the Village Players of Lausanne, an English-speaking theater club in Lausanne, Switzerland: <https://www.villageplayers.ch/> (ongoing). At Theater Portrait, a theater club in Ankara, Turkey: <http://www.portresanat.com/> (past).
- Playing guitar and singing.

## REFERENCES

Anastasia Ailamaki, Professor  
EPFL IC IINFCOM DIAS  
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CH-1015 Lausanne  
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