

Altynbek Isabekov

Sr. Machine Learning Engineer, Ph.D.



Contact

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🌐 www.isabekov.pro

🌐 prometheus-fpga.com

github [isabekov](#)

Linked [in](#) [isabekov](#)

Languages

Kyrgyz (native)

Russian (native)

Turkish (CEFR: C2)

English (CEFR: C2)

German (CEFR: B2)

French (CEFR: B1)

Programming & Tools

Linux (advanced user),
git, BASH, GNU Tools,

Text processing,

Python, Pandas,

SciPy, MATLAB,

SQL, Docker,

TensorFlow,

Apache SPARK, Hive,

System administration,

MinGW, NSIS, \LaTeX ,

Low-level programming.

Mathematical Skills

Machine Learning,

Deep Learning,

Signal Processing,

Information Theory,

Probability Theory,

Linear Algebra,

Numerical Methods.

Summary

Machine learning expert with a strong mathematical background, problem solving skills and programming experience.

Work Experience

since **IQVIA Commercial GmbH & Co. OHG** Frankfurt am Main, Germany
Apr. 2018 *Sr. Machine Learning Engineer at Analytics Center of Excellence*

- ♦ Applied machine learning algorithms to the problem of enrollment prediction in clinical trials (supervised learning, ranking).
- ♦ Identified and solved operational, functional and performance issues.
- ♦ Solved various problems of the end users of Big Data infrastructure (Apache Spark and Cloudera) and Linux OS.
- ♦ As a team, received "CEO Team Award 2020" in "Operational Excellence" category for automating manual processes in investigator selection for rare diseases and making the process 40% faster.

Feb. - Mar. **Koç University, Augmency Inc.** Istanbul, Turkey
2017 *Embedded Software Developer*

- ♦ Debugged Linux drivers for MPU-6050 gyroscope and AK8963 compass.
- ♦ Rebuilt and tested Android OS on Snapdragon 410C SoC.

Oct. 2015 - **Koç University** Istanbul, Turkey
Dec. 2016 *Digital Systems Designer / Embedded Software Developer*

- Designed Prometheus FPGA development board based on a Xilinx chip:
- ♦ Assisted in drawing and testing a printed circuit board (PCB).
 - ♦ Modified and ported open-source software for JTAG programming.
 - ♦ Wrote a Qt-based GUI and installer for the JTAG programming software.
 - ♦ Saved 60% of costs per board for the university (175 Prometheus FPGA boards were manufactured for two classes of students).

Education

2011-2018 **Ph.D., Electrical and Electronics Engineering** Koç University, Istanbul
Dissertation: On the importance of hidden bias and hidden entropy in representational efficiency of the Gaussian-Bipolar Restricted Boltzmann Machines
GPA: 3.68/4.00

2009-2011 **M.Sc., Electrical and Computer Engineering** Koç University, Istanbul
Thesis: Adaptive Diffusion LMS Strategies
GPA: 3.53/4.00

2005-2009 **B.Sc., Telecommunication Engineering** Istanbul Technical University
Thesis: Application of the Empirical Mode Decomposition in the Analysis of the Underwater Ambient Noise
GPA: 3.15/4.00

Teaching Experience

Sep. 2009 - **Koç University** Istanbul, Turkey
Jan. 2017 *Teaching Assistant*

9 semesters Digital Systems Design (VHDL, Xilinx FPGA)

4 semesters Microprocessors (Atmel AVR)

1 semester Digital Signal Processing

1 semester Advanced Signal Processing

Research Experience

2013 - 2018	Koç University <i>Machine Learning</i> Implemented and developed Gaussian-Bipolar Restricted Boltzmann Machines model for the problem of pre-training in neural networks.	Istanbul, Turkey
2012 - 2013	Koç University <i>Information Retrieval</i> Implemented an average precision estimator and the RankNet and LambdaRank ranking algorithms for document search engines.	Istanbul, Turkey
2011 - 2012	Koç University, TürkTelekom <i>Competitive Recommendation Systems</i> Implemented new matrix factorization techniques and embedded adaptive signal processing methods within hybrid recommendation models.	Istanbul, Turkey
2010 - 2011	Koç University <i>Adaptive Filtering</i> Developed new adaptive filtering algorithms for in-network distributed equalization.	Istanbul, Turkey
2008 - 2009	Istanbul Technical University <i>Digital Signal Processing</i> Developed a program for analysis of seismic signals in MATLAB. The tool is capable of performing spectral, statistical, wavelet-based and empirical mode decomposition based analysis.	Istanbul, Turkey

Publications

Isabekov, A., Erzin, E., On the Importance of the Hidden Bias and Hidden Entropy in Representational Efficiency of the Gaussian-Bipolar Restricted Boltzmann Machines. In *Neural Networks*, Vol. 105, pp. 405-418 (2018), doi: [10.1016/j.neunet.2018.06.002](https://doi.org/10.1016/j.neunet.2018.06.002).

Isabekov, A., Belviranlı, S., Baykut, S., Akgül, T., Underwater Ambient Noise Analysis Using Wavelet Transform and Empirical Mode Decomposition Methods. In *8th European Conference on Noise Control*, Edinburgh, United Kingdom, pp. 3783-3790, October 2009, [Online Abstract](#).

Isabekov, A., Baykut, S., Akgül, T., Underwater Ambient Noise Analysis Using Empirical Mode Decomposition Method. In *2009 IEEE 17th Signal Processing and Communications Applications Conference*, Antalya, Turkey, pp. 640-643, April 2009, doi: [10.1109/SIU.2009.5136477](https://doi.org/10.1109/SIU.2009.5136477).

Scholarships

2009 - 2017	Graduate scholarship from Koç University
2009 - 2011	Graduate scholarship from Japan Turkey Central Asia Friendship Association
2006 - 2009	Turkish Prime Ministry Tuition Scholarship
2005 - 2009	Undergraduate scholarship from The Ministry of National Education of The Republic of Turkey

Awards

July 2005	37th International Chemistry Olympiad Bronze medal	Taipei, Taiwan
May 2005	39th International Mendeleev Chemistry Olympiad Bronze medal	Dushanbe, Tajikistan
July 2004	36th International Chemistry Olympiad Certificate of participation	Kiel, Germany
May 2004	38th International Mendeleev Chemistry Olympiad Certificate of participation	Chişinău, Moldova
July 2003	35th International Chemistry Olympiad Honorable mention	Athens, Greece