

# Rares-Darius Buhai

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## Current Position

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**2025–present** Postdoc, School of Computer and Communication Sciences, EPFL.  
Host: Prof. Ola Svensson (ola.svensson@epfl.ch).

## Education

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**2020–2025** **Dr.Sc.**, Department of Computer Science, ETH Zurich.  
Advisor: Prof. David Steurer (dsteurer@ethz.ch).  
Thesis: *Efficient Estimation and Certification in High-Dimensional Semi-random and Non-Spherical Models*.

**2019–2020** **M.Eng.**, Department of Electrical Engineering and Computer Science, MIT.  
Advisor: Prof. Guy Bresler (guy@mit.edu).

**2015–2019** **B.Sc.**, Department of Electrical Engineering and Computer Science, MIT.

## Industry Experience

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**2017** Software Engineering Intern, Google.

**2016** Software Engineering Intern, Facebook.

## Awards

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Gold medal at the International Olympiad in Informatics (IOI), years 2012, 2013, 2014, and 2015.

## Teaching

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Teaching assistant for:

- ETH Zurich: Algorithms and Data Structures (Fall 2021, 2022, 2023, 2024), Algorithmic Foundations of Data Science (Spring 2022), Optimization for Data Science (Spring 2021).
- MIT: Introduction to Probability 6.041 (Spring 2020), Machine Learning 6.867 (Fall 2019).

## Academic Service

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Reviewed for STOC, FOCS, SODA, COLT, ITCS, NEURIPS, APPROX, ESA, and TCC.

## Publications

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- **Dimension Reduction via Sum-of-Squares and Improved Clustering Algorithms for Non-Spherical Mixtures.**  
Prashanti Anderson, Mitali Bafna, Rares-Darius Buhai, Pravesh K. Kothari, David Steurer. COLT 2026.

- **Finding Colorings in One-Sided Expanders.**  
Rares-Darius Buhai, Yiding Hua, David Steurer, Andor Vári-Kakas. FOCS 2025.
- **The Quasi-Polynomial Low-Degree Conjecture Is False.**  
Rares-Darius Buhai, Jun-Ting Hsieh, Aayush Jain, Pravesh K. Kothari. FOCS 2025.
- **Robust Mixture Learning when Outliers Overwhelm Small Groups.**  
Daniil Dmitriev, Rares-Darius Buhai, Stefan Tiegel, Alexander Wolters, Gleb Novikov, Amartya Sanyal, David Steurer, Fanny Yang. NEURIPS 2024.
- **Semirandom Planted Clique and the Restricted Isometry Property.**  
Jarosław Błasiok, Rares-Darius Buhai, Pravesh K. Kothari, David Steurer. FOCS 2024.
- **Computational-Statistical Gaps for Improper Learning in Sparse Linear Regression.**  
Rares-Darius Buhai, Jingqiu Ding, Stefan Tiegel. COLT 2024.
- **Beyond Parallel Pancakes: Quasi-Polynomial Time Guarantees for Non-Spherical Gaussian Mixtures.**  
Rares-Darius Buhai, David Steurer. COLT 2023.
- **Algorithms Approaching the Threshold for Semi-Random Planted Clique.**  
Rares-Darius Buhai, Pravesh K. Kothari, David Steurer. STOC 2023.
- **Learning Restricted Boltzmann Machines with Sparse Latent Variables.**  
Guy Bresler, Rares-Darius Buhai. NEURIPS 2020.
- **Empirical Study of the Benefits of Overparameterization in Learning Latent Variable Models.**  
Rares-Darius Buhai, Yoni Halpern, Yoon Kim, Andrej Risteski, David Steurer. ICML 2020.
- **Human-aware robotic assistant for collaborative assembly: Integrating human motion prediction with planning in time.**  
Vaibhav V Unhelkar, Przemyslaw A Lasota, Quirin Tyroller, Rares-Darius Buhai, Laurie Marceau, Barbara Deml, Julie A Shah. IEEE ROBOTICS AND AUTOMATION LETTERS 2018.