Afrouz Jabal Ameli

Room 4.100, MetaForum,
Eindhoven University of Technology,
Eindhoven, Netherlands

Cell Phone: +31 6 44429169
a.jabalameli@uu.nl
jabal.farsh@gmail.com

Research Interests

- Graph Algorithms.
- Approximation Algorithms.
- Extremal Graph Theory.
- Learning-Augmented Algorithms.
- Algorithm Design and Analysis.
- Parameterized Complexity.
- Computational Geometry.

Education & Research Experience

- **Utrecht University**, Eindhoven, Netherlands (June 2025 - Present)
  PostDoc (with Prof. Jesper Nederlof)
- **GOOGLE-TURING**, Remote, (Jaunuary 2025 - Present)
  Mathematical AI Researcher (Part time)
- **TU/e**, Eindhoven, Netherlands (July 2024 - Present)
  Guest Researcher
- **TU/e**, Eindhoven, Netherlands (November 2021 - July 2024)
  PostDoc (with Prof. Laura Sanità)
- **IDSIA**, Lugano, Switzerland (May 2021 - October 2021)
  PostDoc (with Prof. Fabrizio Grandoni)
- **IDSIA**, Lugano, Switzerland (April 2017- April 2021)
  Ph.D. in Computer Science
  Adviser: Prof. Fabrizio Grandoni
  Thesis title: Approximation Algorithm for Survivable Network Design problems.
- **Sharif University of Technology**, Tehran, Iran (September 2015 - March 2017)
  M.S. in Algorithms and Computation **GPA: 19.40/20**.
  Ranked 1st among all master students of Computer Science.
  Adviser: Prof. Mohammad Ali Abam
  Thesis title: Clustering Uncertain Data
- **Sharif University of Technology**, Tehran, Iran (September 2010 - July 2015)
  B.S. in Computer Engineering

Research Visits

- LIMOS, Clermont, April 2025.
- Tilburg University, Tilburg, February 2025.
- LAMSADE, Paris, December 2024.
- ISTA, Vienna, November 2024.
- Universit libre de Bruxelles, Brussels, May 2024.
- Bocconi University, Milan, April 2024.
- IDSIA, Lugano, April 2024.
- Bocconi University, Milan, December 2023.
- IDSIA, Lugano, November 2023.

- London School of Economic and Political Sciences, London, January 2023.
- IDSIA, Lugano, June 2022.

Honors and Awards

- **2023 Best ICALP Paper Award** for the paper "A 4/3 Approximation for 2-Vertex-Connectivity" with M. Bosch-Calvo and A. Jabal Ameli.
- Awarded **Flowship of Exceptional Talents** by National Elite Foundation for M.Sc. Program (2015)
- **Bronze Medal** in Asia Pacific Olympiad in Informatics (APIO 2010)
- **Gold Medal** in National Olympiad in Informatics (2009)
- **Bronze Medal** in National Olympiad in Mathematics (2009)
- **Ranked 5^{th}** in national graduate entrance exam in Computer Science (2015)
- Awarded as an **Outstanding Student** by Sharif University of Technology (2010)
- Awarded **Flowship of Exceptional Talents** by National Elite Foundation for B.Sc. Program (2010)
- **2019 Best ICCG Paper Award** for the paper "On the Maximum Enclosure Problem" with H. Zarrabi-zadeh.

Publications

- M. Calvo Bosch, F. Grandoni, and A. Jabal Ameli **"A PTAS for Maximum Triangle-Free** 2 **Matching"**, Mathematical Programming (*To appear*).
- A. Jabal Ameli, F. Motiei, and M.Saghafian **"On Maximum MST-ratio"**, WALCOM 2026.
- M. Calvo Bosch, F. Grandoni, and A. Jabal Ameli **"PTAS for Maximum Triangle Free** 2**-Matching"**, Submitted to Mathematical Programming.
- M. Calvo Bosch, F. Grandoni, and A. Jabal Ameli **"A $\frac{5}{4}$-approximation for** 2**-ECSS"**, STOC 2025.
- A. Abiad, A. Jabal Ameli and L. Reijnders **"The clique number of the exact distance t-power graph: complexity and eigenvalue bounds"**, Discrete Applied Mathematics.
- D. Hyatt Denesik, A. Jabal Ameli and L. Sanità **"Improved Approximations for Flexible Network Design"**, ESA 2024.
- D. Hyatt Denesik, A. Jabal Ameli and B. Smeulders **"Approximation Algorithm for k-scenario Matching Problem"**, WAOA 2024.
- M. Calvo Bosch, F. Grandoni, and A. Jabal Ameli **"A $\frac{4}{3}$ Approximation for** 2**-Vertex-Connectivity"**, TheoretiCS. (Preliminary version accepted in ICALP 2023)
- D. Hyatt Denesik, A. Jabal Ameli and L. Sanità **"Finding Almost Tight Witness Trees"**, Mathematics of Operation Research. (Preliminary version accepted in ICALP 2023)
- M. Garg, F. Grandoni and A. Jabal Ameli **"Improved Approximation for Two-Edge-Connectivity"**, SODA 2023.
- F. Grandoni, A. Jabal Ameli and V. Traub **"Breaching the** 2**-approximation Barrier for the Forest Augmentation Problem"**, STOC 2022.
- W. Gálvez, F. Grandoni, A. Jabal Ameli and K. Khodamoradi **"On the Demand Strip Packing problem"**, APPROX 2021.
- W. Gálvez, F. Grandoni, A. Jabal Ameli, K. Jansen, A. khan and M. Rau, **"A Tight** $(3/2+\epsilon)$ **Approximation for Skewed Strip Packing"**, Algorithmica (Preliminary version accepted in APPROX 2020).
- J. Birka, F. Grandoni and A. Jabal Ameli, **"Breaching 2-approximation for Connectivity Augmentation Problem"**, SIAM Journal of Computing (Preliminary version accepted in STOC 2019).
- W. Gálvez, F. Grandoni, A. Jabal Ameli and K. Sornat, **"On The Cycle Augmentation Problem: Hardness and Approximation Algorithms"**, Thoery of Computing systems 2021. Preliminary version accepted in WAOA 2019.

- A. Jabal Ameli and H. Zarrabi-zadeh, **"On the Maximum Triangle Enclosure Problem"**, ICCG 2019.

Scientific Reviewing Activities

- Journal of Discrete Applied Mathematics, Mathematics of Operation Research, Journal of Mathematical Programming, Algorithmica, ACM Transactions on Algorithms, Journal of Theoretical Computer Science.
- STOC, SODA, ICALP, IPCO, CIAC, APPROX, ISAAC, STACS, SWAT, ORL, Fun.

Workshops And Schools Participated

- Dutch Optimization Day, Nov 2025, Tilburg.
- Algorithm Seminars, Apr 2025, Utrecht University (Talk: "Recent Advances for Survivable Network Design Problems").
- SPOR PhD Day, Feb 2025, Eindhoven.
- TiSEM's seminars on Operations Research, Feb 2025, Tilburg (Talk: "Towards Efficient Design of Resilient Networks")
- LAMSADE seminars, Dec 2024, Paris (Talk: "Approximation Algorithms for Survivable Network Design Problems").
- SIGAlgo.nl symposium, Nov 2024, Eindhoven.
- ISTA CGT Seminar, Nov 2024, Vienna (Talk:"Recent Advances for Survivable Network Design Problems").
- ULB Seminars, May 2024, Brussels (Talk: "Approximation Algorithms for Survivable Network Design").
- Bocconi University Seminar, December 2023, Milan (Talk: "A $\frac{4}{3}$-Approximation for Two-Vertex-Connectivity").
- 12th Cargese-Porquerolles Workshop, September 2023, Porquerolles (Contributed Talk: "A $\frac{4}{3}$-Approximation for Two-Vertex-Connectivity").
- Bocconi Theory Day, January 2023, Bocconi University (Talk: "Improved Approximation for Two-Edge-Connectivity").
- Seminar and PhD Seminar on Combinatorics, Games and Optimisation, London School of Economic and Political Sciences (Talk: "Improved Approximation for Two-Edge-Connectivity").
- Combo Summer school 2023, EPFL, Lausanne, Switzerland
- Approximation and Relaxation Workshop, Bonn, Germany (Talk: "Breaching the 2-approximation for connectivity augmentation problem")
- HCM Seminars, Bonn, Germany, July 2021 (Talk: "Approximation Algorithms for Connectivity Augmentation Problem")
- AFDOCS Summer school on Algebraic Complexity Theory and Computer Algebra, August 21 - 25, 2017, Max Plank Institute, Saarbrucken, Germany.
- Highlight Of Algorithms 2020, June 2020, London School of Economic and Political Sciences.
- Highlights Of Algorithm 2019, June 14-17, 2019, University of Copenhagen.
- Highlight Of Algorithms 2018, June 2018, Vrije Universitei (VU) Amsterdam.
- AFDOCS Summer school on Fine-Grained Complexity and Algorithms, August 13 - 17, 2018, Max Plank Institute, Saarbrucken, Germany.
- 9th Cargese Workshop on Combintorial Optimization, August, 2018, Corse Island, France.
- AFDOCS Summer school on Games, Brains, and Distributed Computing, August 19 - 23, 2019, Max Plank Institute, Saarbrucken, Germany.

Teaching Experience

- **Lecturer at TU/e:**
  Graphs and Algorithms 2MMD30 (Q3 2023-2034)
  Lecturer Evaluation Score: 9/10.

- **Lecturer at TU/e:**
  Graphs and Algorithms 2MMD30 (Q3 2022-2023)
  Lecturer Evaluation Score: 8.5/10.
- **Guest Lecturer at Sharif University:** Algorithm and Data Structures (Fall 2016)

OTHER TEACHING ACTIVITIES

- **Instructor at TU/e:**
  Mathematics II (Q4 2021-2022 and Q4 2022-2023)
- **Instructor at SUPSI:**
  Approximation Algorithms 5EMA0 (Spring 2020)
  Advanced Algorithms (Fall 2019)
  Advanced Algorithms and Approximation Algorithms (Fall 2018)
- **Teaching Assistant at USI:**
  Programming Fundamentals 1 (Fall 2019)
  Algorithm and Data Structures (Fall 2018, Fall 2020)
  Data Base Design (Spring 2018)
- **Teaching Assistant in Sharif university:**
  Approximation Algorithms (Fall 2017)
  Randomized Algorithms (Fall 2016)
  Design and analysis of Algorithms (Spring 2015, Fall 2012)
  Discrete Mathematics (Spring 2015)
- **Lecturer of** *Graph Theory* **Course in Iranian National Olympiad in Informatics Summer school (2012-2020)**
- **Teacher** of *Discrete Mathematics* in Farzanegan High School, Tehran, Iran (2014-2020)
- **Lecturer of** *Discrete Mathematics* **Course in Iranian National Olympiad in Informatics Summer school (2014-2015)**
- **Mentor and deputy leader of Iran's team in International Olympiad (2016)**

TECHNICAL SKILLS

- **Programming skills:** Proficient in C++, Java and Python.
- Familiar with MATLAB.

OTHER SCIENTIFIC ACTIVITIES

- **Head of Theoretical Contests Committee** of Iraninan National Olympiad in Informatics.
- **Scientific head of Opedia website**[1]**.**
- **Co-founder and member** of Iranian (International) Combinatorics Olympiad (ICO)[2]), 2019-present.

[1] In Opedia we aim to provide free educational resources for students all over Iran who can't access the relative resources to prepare for Informatics Olympiad

[2] ICO is an international contest with focus on combinatorial problems held in different levels, for high school students, university students and professionals in which the contestants can participates individually or in groups of size up to 3.