Karlo Knežević

Ph.D., Head of AI @ Sofascore

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Basic Info

Place of birth
Zagreb, Republic of Croatia

Date of birth
4th July 1989

Work Experience

April 2024– Present
Head of AI, *AI Team*, Sofascore, Zagreb
Overseeing the Artificial Intelligence, Analytics, and Information team, with a focus on strategy, leadership, and innovation. Collaborating closely with other Engineering Managers to drive cross-functional initiatives and align AI efforts with organizational goals.

December 2021– April 2024
AI Engineering Manager, *AI Team*, Sofascore, Zagreb
Led the Artificial Intelligence, Analytics, and Information team, focusing on team development, strategic execution, and advancing AI-driven solutions to support organizational objectives.

April 2021– Present
CEO, *Octobit Consulting*, Octobit
Delivering consultancy services, engineering expertise, and tailored technical solutions to address complex business challenges and drive innovation.

December 2018– Present
External Associate Lecturer, *Algebra University College*
Teaching courses including Python Fundamentals, Introduction to Python, Advanced Python, and Artificial Intelligence in Python, with a focus on practical applications and industry relevance.

December 2020– December 2021
Lecturer and Researcher, *Department of Software Engineering*, Algebra University College, Zagreb
Delivered lectures on Software Engineering, Operating Systems, PHP Programming, Python Programming, and Frontend Technologies. Conducted research and contributed to the academic development of the department.

December 2016– December 2020
Research Assistant, *Department of Electronics, Microelectronics, Computer, and Intelligent Systems*, Faculty of Electrical Engineering and Computing, University of Zagreb
Contributed to the EvoCrypt project, focusing on evolutionary computation in cryptology. Served as a teaching assistant and pursued doctoral studies in the field.

February 2014– December 2016
Software Engineer and R&D Team Leader, *SofaScore*, SofaScore, Zagreb
Led research and development initiatives, contributed to PHP backend and iOS programming, and established and managed a student academy to nurture new talent.

AY 2012
Software Engineer, *Summer Internship*, Liferay Inc., Zagreb
Contributed to Java EE programming, working with Spring, portlets, and Java web technologies to develop scalable solutions.

Education

October 2014– April 2023   **Postgraduate doctoral study**, *Faculty of Electrical Engineering and Computing*, University of Zagreb
Ph.D. - magna cum laude (with great honors)
Research field: Computing
Mentor: Prof. Domagoj Jakobović, Ph.D. and Associate Prof. Stjepan Picek, Ph.D.
Ph.D. thesis: Machine learning and evolutionary computation in design and analysis of symmetric key cryptographic algorithms
Average grade for all courses: 5.000/5.000 (1-insufficient, 5-excellent)

July 2013   **Graduate study**, *Faculty of Electrical Engineering and Computing*, University of Zagreb
Master of Science in Computing - cum laude (with honors)
Profile: Computing, Computer Science
Mentor: Prof. Domagoj Jakobović
Master thesis: Evolutionary algorithms based on probability distributions
Average grade for all courses: 4.896/5.000 (1-insufficient, 5-excellent)

July 2011   **Undergraduate study**, *Faculty of Electrical Engineering and Computing*, University of Zagreb
Bachelor of Science in Computing
Profile: Computing, Computer Science
Mentor: Prof. Domagoj Jakobović
Bachelor thesis: Scheduling for parallel unrelated machines using evolutionary algorithms
Average grade for all courses: 4.441/5.000 (1-insufficient, 5-excellent)

2004–2008   **Mathematical Gymnasium**, *XV. Gymnasium*, Zagreb
Mathematics and informatics

1996–2004   **Elementary school**, *Elementary school of Dragutin Domjanić*, Zagreb

Languages

Croatian   Native
English   Professional (TOEFL 87, B2)
German   Intermediate (B1)

Research Interests

Primary Areas   Evolutionary Computation, Optimization, Machine Learning, Artificial Intelligence
Additional Interests   Cryptography

Teaching

2014–2018   Introduction to Java Programming Language - Reviewer
2017–2020   Parallel Computing - Laboratory Practicum
2018–2020   Operating Systems - Laboratory Practicum
2018–2021   Software Engineering - Teaching and Laboratory Practicum

2021	Standards in Internet Technology Application - Teaching and Laboratory Practicum
2021	Development of Web Applications - Teaching and Laboratory Practicum
2021	Project Approach to Applications Development - Teaching and Laboratory Practicum
2021	Programming in Python - Teaching and Laboratory Practicum
2019–2021	Supervisor for Graduate Students

Publications

2022	Knežević, K., Fulir, J., Jakobović, D., Picek, S., NeuroSCA: Evolving Activation Functions for Side-channel Analysis, IEEE Access
2016	Adaptive scheduling on unrelated machines with genetic programming, M. Đurasević, D. Jakobović, K. Knežević, Applied Soft Computing

Professional talks

2024	Harnessing Real-Time Power: Inside Sofascore's Data-Driven Infrastructure, conference lecture, Data Science Europe, Belgrade, Serbia, November 21
2024	How AI is shaping the future of finance, banking and society , internal panel, ZaBa - UniCredit, Zagreb, Croatia, November 7
2024	Harnessing Real-Time Power: Inside Sofascore's Data-Driven Infrastructure, conference lecture, Nog.hr, Zagreb, Croatia, October 17
2024	Drawing the Line between Responsible AI Development & Business Model, conference panel, Data Science Adria, Zagreb, Croatia, May 24
2024	AI in Sofascore, internal talk, NSoft, Mostar, Bosnia and Herzegovina, May 14
2024	Artificial Intelligence - hype or what?, public panel, Sofascore Stadium Meetup, Zagreb, Croatia, March 5
2023	Demistifikacija umjetne inteligencije, public talk, Tinel, lecture, Split, Croatia, November 30
2023	Okrugli stol: Predvodnici industrije budućnosti, public panel, LIDER G.R.I.D., Zagreb, Croatia, May 24
2023	Okrugli stol: Neka bude volja stroja?, public panel, Croatian Parliament, Zagreb, Croatia, March 14
2022	Analiza i strojno učenje na velikim skupovima podataka, public talk, IT Community Day, Slavonski Brod, Croatia, December 2
2022	Analiza i strojno učenje na velikim skupovima podataka, public talk, .debug, lecture, Zagreb, Croatia, June 2

Academic talks, workshops and schools attendance

Citations	🎓 Google Scholar, 208 citations, h-index 7, i10-index 5 (Jan 14, 2025)
2017	Cryptanalysis of Ubiquitous Computing Systems, COST Action IC1403, Croatian committee substitute member, Sutomore, Montenegro, March 13-16
2017	Combinatorial Optimization in Cryptography, K. Knežević, MIPRO - International Convention on Information and Communication Technology, Opatija, Croatia, May 22-26

2017	On the evolution of bent (n, m) functions, S. Picek, K. Knežević, D. Jakobović, IEEE CEC, Donostia - San Sebastián, Spain, June 5-8
2017	Amplitude-oriented Mixed-type CGP classification, K. Knežević, S. Picek, J. F. Miller, GECCO, Berlin, Germany, July 15-19
2017	Sigevo Summer School, summer school on genetic and evolutionary computation, GECCO, Berlin, Germany, July 14-21
2017	Improving Applicability of Nature-Inspired Optimization by Joining Theory and Practice, COST Action CA15140 training school, Pierre and Marie Curie University, Paris, France, October 18-24
2018	Summer School on real-world crypto and privacy, Sibenik, Croatia, June 11-15
2018	A Search for Differentially-6 Uniform $(n; n-2)$ Functions, S. Picek, K. Knežević, D. Jakobović, C. Carlet, IEEE CEC, Rio de Janeiro, Brazil, July 8-13
2018	Evolving Bent Quaternary Functions, S. Picek, K. Knežević, L. Mariot, D. Jakobović, A. Leporati, IEEE CEC, Rio de Janeiro, Brazil, July 8-13
2018	The Design of (Almost) Disjunct Matrices by Evolutionary Algorithms, K. Knežević, S. Picek, L. Mariot, A. Leporati, D. Jakobović, TPNC, Dublin, Ireland, Decembar 12-14
2019	Improving Applicability of Nature-Inspired Optimization by Joining Theory and Practice, COST Action CA15140 training school, University of Coimbra, Coimbra, Protugal, November 25-29
2020	What Is Your MOVE: Modeling Adversarial Network Environments, K. Knežević, S. Picek, D. Jakobović, J. Hernandez-Castro, Evo*2020, Seville, Spain, April 15-17, online conference
2021	Generating Prime Numbers Using Genetic Algorithms, K. Knežević, 44th International Convention on Information, Communication and Electronic Technology (MIPRO), September , online conference

Technical & Leadership Skills

AI/ML	Proficient in Python, TensorFlow, PyTorch.
Data & Infra	Skilled in data pipelines, cloud, and scalable AI systems.
Optimization	Experience in GPU acceleration, parallel computing, and distributed systems.
Leadership	Proven ability to lead AI teams, define roadmaps, and align projects with business goals.
Collaboration	Strong in stakeholder management, mentoring, and cross-team coordination.

Github projects

GitHub	www.github.com/KarloKnezevic

Professional Memberships

IEEE Member

ACM Member

Awards and scholarships

2023	Ph.D. with honours (magna cum laude)

2020   **best paper award**: What Is Your MOVE: Modeling Adversarial Network Environments, K. Knežević, S. Picek, D. Jakobović, J. Hernandez-Castro, Evo*2020, Seville, Spain, April 15-17

2019   **scholarship**, Improving Applicability of Nature-Inspired Optimization by Joining Theory and Practice, COST Action CA15140 training school, University of Coimbra, Coimbra, Protugal, November 25-29

2018   **scholarship**, Summer School on real-world crypto and privacy, Sibenik, Croatia, June 11-15

2017   **scholarship**, Improving Applicability of Nature-Inspired Optimization by Joining Theory and Practice, COST Action CA15140 training school, Pierre and Marie Curie University, Paris, France, October 18-24

2017   **scholarship**, Sigevo Summer School, summer school on genetic and evolutionary computation, GECCO, Berlin, Germany, July 14-21

2013   graduated with honours (cum laude), top 10% of class

2012–2013   **scholarship** of Croatian Ministry of Science, Education and Sport

2012–2013   **scholarship** of National Foundation for the Support of Student Living Standard

More Info

Other

2022–Present   member of Societas "Fratres Draconis Croatici", Draco Dalmatici, January 8

2016–2022   member of Academic male choir at Faculty of Electrical Engineering and Computing

2018–2020   secretary and member of Academic choir of Universiy of Zagreb