# Mete Saka

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I am a PhD candidate in Computer Science specializing in knowledge graphs, databases, and cyber-physical infrastructure. My research focuses on advancing state-of-the-art data-metadata management technologies to enable scalable data science and machine learning across diverse systems and industries.

## Education

**Ph.D, Computer Science** — Golden, CO
*Colorado School of Mines, GPA:3.7* — *Aug 2024 – Present*

**M.Sc., Computer Science** — Golden, CO
*Colorado School of Mines, GPA:3.7* — *Aug 2022 – Aug 2024*

**Thesis:** Workload-Driven Data Partitioning For Data Intensive Serverless Computing

**B.Sc., Industrial Engineering** — Istanbul, TR
*Bogazici University* — *Sep 2018 – Jan 2022*

## Peer-Reviewed Publications

### Conference Publications

- Mulayim O.B., Anwar A., **Saka,U.M.**, Paul L., Prakash A.K., Fierro G., Pritoni M., Bergés M., BuildingQA: A Benchmark for Natural Language Question Answering over Building Knowledge Graphs, The 12th ACM International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation (BUILDSYS '25)., 2025, https://doi.org/10.1145/3736425.3770097 **(Best Paper runner-up)**
- Paul L., Mulayim O.B., **Saka,U.M.**, Prakash A.K., Fierro G., Pritoni M., I Can't Read All That! Improving the Usability of Semantic Models Using Concise, Ontology-Agnostic, Building-Specific Schemas, The 12th ACM International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation (BUILDSYS '25), 2025, https://doi.org/10.1145/3736425.3770107

### Journal Publications

- **Saka,U.M.**, Pacheco-Hague,K., Duzgun,S., Smith,N., An analysis of the impact of $CO^2$ emissions from deforestation and mining in Madre de Dios, Perú. Extractive Industries and Society, 2024, https://doi.org/10.1016/j.exis.2024.101526
- **Saka,U.M.**, Duzgun,S., Bazilian,M., Analysis of World Trade Data with Machine Learning to Enhance Policies of Mineral Supply Chain Transparency, Resources Policy, Volume 89, 2024, https://doi.org/10.1016/j.resourpol.2024.104671
- Smith, N.M., Seguin, K., **Saka, U.M.**, Duzgun, S., Smith-Roberts, A., Soud, D. and White, J., Gold Supply Chain Opacity and Illicit Activities: Insights from Peru and Kenya, Journal of Illicit Economies and Development, 2024, https://doi.org/10.31389/jied.209

### Posters

- **Saka, U.M.**, Paul L., Chapin F., Struck S., Anwar A., Fierro G., Acquirium: A Data-Metadata Management Framework for Water Treatment Systems, The 12th ACM International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation (BUILDSYS '25), 2025, https://doi.org/10.1145/3736425.3772123
- Anwar A, **Saka,U.M.**,Kannan S.K.N., Safronov D., Salter P., Munz K., Fierro G., Velasco P.C.T, Huang Q., Economic Feasibility of IoT-Based Controls in Low-Income Residential Buildings, The 12th ACM International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation (BUILDSYS '25), 2025, https://doi.org/10.1145/3736425.3772119
- Anwar A., **Saka,U.M.**, Fierro G., Graph Learning on Cyber-Physical Knowledge Graphs, The 23rd ACM Conference on Embedded Networked Sensor Systems (SENSYS '25), 2025, https://doi.org/10.1145/3715014.3724049

## Experience

**Colorado School of Mines** Golden, CO

*Research Assistant* *Jan 2022 – Present*

- Building data management technologies that enable data science and machine learning workflows
- Advancing methods for knowledge graph access and summarization to improve usability, interoperability, and downstream analytics
- Applying knowledge graphs for integrated data–metadata access, semantic modeling, and intelligent querying
- Exploring serverless cloud computing architectures to support scalable, cost-efficient data processing
- Performing economic feasibility analyses of IoT systems
- Research funded by National Alliance for Water Infrastructure
- Previously, Worked as a Research Assistant on an NSF-funded project examining Illicit Gold and Mercury Supply Chains, led by Dr. Sebnem Duzgun and Dr. Nicole Smith, resulting in 4 peer-reviewed journal publications.

*Adjunct Professor* *Aug 2023 – Dec 2024*

- Instructor of **CSCI 470/575 (Machine Learning)** class in Fall 24 for 72 students
- Instructor of 3 sections of **CSCI 128 (Computer Science for STEM)**, a core curriculum class in Fall'23 and Spring'24 semesters.
- Received high teaching evaluation scores (+10% above school and department average) from my students.

*Teaching Assistant* *Jan 2023 – Dec 2024*

- Worked as a Teaching assistant of CSCI 598C (Advanced Data Systems), a graduate level seminar class, CSCI 406 (Algorithms), a senior level CS curriculum class
- Contributed the development of CSCI 128 (Computer Science for STEM), an introductory CS course by creating and improving teaching material

**Marsh McLennan Companies** Istanbul, TR

*Risk Analyst Assistant* *Feb 2021 - Dec 2021*

- Collaborated projects on Risk Analysis, Cyber Risk Consulting, Risk Quantification, Risk Financing Optimization and Benchmarking

**QNB Finansbank** Istanbul, TR

*Marketing Intern* *July 2020 - Feb 2021*

- Analyzed marketing performance data and delivered reports to evaluate and optimize campaign effectiveness for private banking customers

**Acibadem Healthcare** Istanbul, TR

*Business Analyst Intern* *Apr 2019 - Sep 2019*

- Analyzed hospital and business-unit performance data to generate reports that supported operational and strategic decisions

## Miscellaneous

**Skills**

- **Programming:** C, C++, Java, Python, Rust, R, PyTorch, Tensorflow, Pandas, Polars, Sklearn, VBA, SPARQL, SQL
- **Computer:** Git, LaTeX, Google Cloud, AWS, Docker, Kubernetes, RDF, Grafana, MQTT, EnergyPlus, Microsoft Excel
- **Soft Skills:** Teaching, Mentorship, Technical Writing, Public Speaking, Curriculum Development

**Awards, Scholarships, Fellowships**

- Google Summer of Code, Contributor, 2024
- Judge, Congressional App Challenge. District Judge of CO Congressional district-07, 2023 - 2024 - 2025
- McQuiston Fellowship, 2022 - 2023
- C-MAPP Scholarship, 2023 - TIAA - 2024 - OMBUD
- Turkish Merit Based Scholarship, Awarded to top 100 students among 2M by Republic of Turkey, 2016
- Colorado State Dance Champion, Argentine Tango Category, 2023
- President of Bogazici University Dance Society (2019)
- First Place, BlasterHacks Hackathon (2024)