Sepideh Nikookar

Contact Information

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Research Interests

Data Management for AI, Data Exploration, Reinforcement Learning, Human-in-the-loop AI, Optimization Techniques, Data Science Applications.

Relevant Skills

- **Programming Languages:** Python, SQL, Matlab, C#, R, RStudio, Mathematica.
- **Area of Expertise:** Reinforcement Learning, Diversity in Recommendation, Task Planning, Human-in-the-loop AI.
- **Tools:** LaTex, Microsoft Office, MathType.

Education

- **New Jersey Institute of Technology (NJIT)**
  - Ph.D. Candidate in Computer Science (Sep 2019 - Aug 2023).
    - Dissertation Topic: Human-AI Complex Task Planning
    - Advisor: Professor Senjuti Basu Roy.
    - GPA: 3.95.
- **K.N. Toosi University of Technology, Iran**
  - M.S. in Applied Mathematics (Sep 2014 - Dec 2016).
    - Dissertation Topic: On the Steepest Descent Algorithm for Solving Quadratic Functions.
    - Advisor: Professor M. Reza Peyghami.
    - GPA: 4.00 (Valedictorian).
  - B.S. in Applied Mathematics (Sep 2010 - July 2014).
    - GPA: 3.52 (3rd rank).

Published Papers

- *Human-AI Complex Task Planning.*
  S. Nikookar; 2023 IEEE 39th International Conference on Data Engineering (ICDE).
- *Cooperative Route Planning Framework for Multiple Distributed Assets in Maritime Applications.*
  S. Nikookar, S. Somasunder, P. Sakharkar, S. Basu Roy, A. Bienkowski, M. Macesker, K. Pattipati, D. Sidoti; SIGMOD/PODS '22: Proceedings of the 2022 International Conference on Management of Data.
- *Guided Task Planning Under Complex Constraints.*
  S. Nikookar, P. Sakharkar, B. Smagh, S. Amer-Yahia, S. Basu Roy; 2022 IEEE 38th International Conference on Data Engineering (ICDE).
- *Diversifying Recommendations on Sequences of Sets.*
  S. Nikookar, M. Esfandiari M, RM. Borromeo, P. Sakharkar, S. Amer-Yahia, S. Basu Roy; The VLDB Journal 2022.
- *Multi-Session Diversity to Improve User Satisfaction in Web Applications.*
  M. Esfandiari M, RM. Borromeo, **S. Nikookar**, P. Sakharkar, S. Amer-Yahia, S. Basu Roy; WWW '21: Proceedings of the Web Conference 2021.

Technology Transfer

- A Reinforcement Learning based framework (SIGMOD 2022) is being deployed for water-space management in Navy Research Lab, Monterey, CA.

Honors and Awards

- 2023 IEEE International Conference on Data Engineering (ICDE) Travel Award.
- ACM SIGMOD/PODS 2022 Student Travel Award.
- Ranked second among CS students in NJIT GSA 3 Minutes Presentation (March 2022).
- The Web Conference 2021 Student Scholarship Award.
- Certificate of Recognition for outstanding GPA (Top 5%) in B.S.

Conference Presentations

- *Human-AI Complex Task Planning*,
  39th IEEE International Conference on Data Engineering (ICDE) Ph.D. Symposium
  (Anaheim, CA, April 2023)
- *Cooperative Route Planning Framework for Multiple Distributed Assets in Maritime Applications*,
  ACM SIGMOD/PODS International Conference on Management of Data
  (Philadelphia, PA, June 2022)
- *Guided Task Planning Under Complex Constraints*,
  38th IEEE International Conference on Data Engineering (Virtual, May 2022)
- *Multi-Session Diversity to Improve User Satisfaction in Web Applications*,
  30th The Web Conference (Virtual, April 2021)

Workshop Presentation

- *Human-AI Complex Task Planning*,
  CIKM Workshop on Human-in-the-loop Data Curation (Atlanta, GA, October 2022)

Poster Presentations

- *e-Poster Presentation*,
  NAI-NJIT Workshop on Sustainable Societies: Data Revolution (October 2022)
- *e-Poster Presentation*,
  2019 NJIT Research Institutes, Centers and Laboratories Showcase and President's Forum

Invited Talk

- *NJIT Department of Mathematical Sciences Optimization and Machine Learning Workshops* (December 1, 2022).
- *NJIT Department of Mathematical Sciences Optimization and Machine Learning Talks* (April 7, 2022).

Services

- Student Member of Committee of Faculty Ascension for NJIT Strategic Plan 2030.
- 2023 HILDA (Human-In-the-Loop Data Analytics) Mentor.
- 2023 IEEE Transactions on Mobile Computing Reviewer.
- 2023 Information Systems Reviewer.
- 2023 SIGMOD Availability Reviewer.
- 2022 SIGKDD Conference on Knowledge Discovery and Data Mining External Reviewer.

Research Mentoring

- Undergrad Students:
  - Eden Dubrovsky (Sep 2021 - May 2023)
  - Michael Tuma (May 2021 - Sep 2021)
  - Paras Sakharkar (Sep 2019 - May 2022)
- Master Students:
  - Deep Ketan Mistry (June 2022 - July 2023)
  - Chandresh Sikarwar (Dec 2021 - May 2022)
  - Kishore Prabahar (Jan 2021 - Sep 2021)
  - Baljinder Smagh (Jun 2020 - Dec 2020)
  - Sathyanarayanan Somasunder (Feb 2020 - Sep 2020)
  - Suraj Jha (Jan 2020 - May 2020)

Graduate Coursework

- ❑ Advanced Operations Research I.
- ❑ Applications of Parallel Computing.
- ❑ Computability and Complexity.
- ❑ Convex Optimization.
- ❑ Data Management Systems Design.
- ❑ Data Mining.
- ❑ Data Structure and Algorithms.
- ❑ Introduction to Big Data.
- ❑ Nonlinear Optimization.
- ❑ Numerical Methods in Linear Algebra.
- ❑ Operating Systems Design.
- ❑ Optimization over Second Order Cones and Positive Semi-definite Matrices.

References

- **Dr. Senjuti Basu Roy**, Associate Professor of Computer Science
  New Jersey Institute of Technology
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- **Dr. Sihem Amer-Yahia**, Research Director
  CNRS, University of Grenoble Alpes
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- **Dr. Krishna R. Pattipati**, Distinguished Professor of Electrical and Computer Engineering
  University of Connecticut
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