Sofia Eleni Spatharioti

Data Scientist, The Boeing Company

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Work Experience

The Boeing Company, Seattle, WA, USA (05/2024 – Present)

Data Scientist, BDS Analytics & AI

- **[Project]** Member of the GenAI team within BDS Analytics & AI. Focusing on building scalable GenAI solutions for BDS.
- **[Contributions]** Combining Generative AI and traditional Machine Learning approaches towards developing platforms for improving complex data comprehension and decision making in manufacturing engineering and supply chain.
- **[Technical Contributions]** Building generative AI enhanced topics modeling and clustering frameworks using embeddings-based approaches and large language models.
- **[Technical Contributions]** Developing workflows for measuring, comparing and packaging models using Python and FastAPI. Collaborating in incorporating GenAI features as part of the ELT process.

Microsoft Research, New York City, NY, USA (03/2021 – 06/2023)

Postdoctoral Researcher, Computational Social Science Group

References: Dan Goldstein & Jake Hofman

- **[Project]** Worked on the Perspectives Engine project on building AI tools for statistical literacy.
- **[Project]** Conducted research on the impact of LLM powered search tools on consumer research and decision making.
- **[Technical Contributions]** Built pipelines for extracting & analyzing data from large knowledge bases (e.g., Wikidata). Developed computational models in Python and R for re-expressing complex numbers, improving decision making.
- **[Technical Contributions]** Created virtual lab systems in React, Node.js, JavaScript and TypeScript. Automated the end-to-end flow of experiments, from launch, to monitoring, statistical analysis and visualizations, using Python and R workflows.
- **[Impact] First author publication at CHI. Product deployments to Microsoft PowerPoint, Word and Outlook. LLM work featured on Microsoft's New Future of Work and Microsoft Research's AI & Productivity reports.**

Northeastern University, Boston, MA, USA (09/2015 - 12/2020)

Research Assistant, Khoury College of Computer Sciences

References: Seth Cooper & Sara Wylie

- **[Projects]** Created Cartosco.pe, an open-source crowdsourcing platform for environmental justice, disaster response and citizen science, Tile-o-Scope Grid, an image matching web game, and Tile-o-Scope AR, an Augmented Reality tabletop toolkit.
- **[Contributions]** Led an interdisciplinary team of developers, academics, designers and non-profits. Set research agendas, implemented features and launched key in-person and online global events.
- **[Technical Contributions]** Conducted research studies using quantitative and qualitative methods. Developed Python workflows for extracting spatial data from available APIs. Built models for analyzing and visualizing user data in R and JS.
- **[Impact] Open-sourced platform used by non-profits in the U.S. and Nigeria reaching thousands of users. Multiple publications on its impact.**

Microsoft Research, New York City, NY, USA (05/2018 - 08/2018, 05/2019 - 08/2019)

Research Intern, Computational Social Science Group

Velti, Athens, Greece (10/2014 - 03/2015)

Junior Software Engineer, Innovation Department

Technical Skills

Languages

English: Fluent
French: Good
Greek: Native Speaker

Programming Skills & Tools

Python · R · JavaScript · TypeScript
Scikit-Learn · Tensorflow · PyTorch · Pandas
Shiny · D3.js · Plotly · Power BI · Grafana
Node.js · FastAPI · AWS · SQL · SOLR · Git
CSS, HTML, AngularJS, React
Figma, C#, Unity

Education

Northeastern University, Boston, MA, USA (09/2015 - 12/2020)

Ph.D. in Computer Science, Advisor: Seth Cooper
Dissertation: "Designing Effective Interfaces for Motivating Engagement in Crowdsourced Image Labeling"

National Technical University of Athens, Athens, Greece (09/2009 - 06/2015)

Degree in Electrical and Computer Engineering (5-year study program, M.Eng. equivalent)

Selected Projects

- **Perspectives Engine:** Created a scalable system for improving statistical literacy in news and other media by automatically generating numerical analogies tailored to different audiences. Trained and evaluated computational models using open-source data for relevance signals. Conducted experiments measuring model performance on two global markets, achieving 80% preference rates for U.S. audiences and 59% for French audiences.
- **Cartosco.pe:** Created a web crowdsourcing platform for image labeling using Node.js, MySQL, JavaScript, AngularJS, CSS and HTML. Conducted data analysis using R and Python. Empowered non-profits to set up projects using different task templates, upload data and generate real-time results and map visualizations.
- **Tile-o-Scope Grid:** Developed an image matching web game for image labeling in Unity using C#. Implemented Reinforcement Learning algorithms for serving level difficulties that led to increased engagement and output levels.
- **Tile-o-Scope AR:** Led a team of developers and designers in developing an Augmented Reality tabletop toolkit for image labeling using Unity. Led user studies on the impact of collaboration/competition in user experience and engagement.
- **Time Zone Perspectives:** Collaborated with a multidisciplinary team on building a web tool for predicting and auto-completing time zone information. Our tool has been deployed on Microsoft Outlook.

Selected Publications

- **Sofia Eleni Spatharioti**, David M. Rothschild, Daniel G. Goldstein, Jake M. Hofman, (2025) *Effects of LLM-based Search on Decision Making: Speed, Accuracy, and Overreliance*. In: Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems.
- **Sofia Eleni Spatharioti**, Daniel G. Goldstein, Jake M. Hofman, (2024) *Using Open Data to Automatically Generate Localized Analogies*. In: Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems.
- **Sofia Eleni Spatharioti**, Eliza Boetsch, Scott Eustis, Kutub Gandhi, Matt Rota, Archana Apte, Seth Cooper, Sara Wylie, (2022) *An Effective Platform for Crowd Classification of Coastal Wetland Loss*, In: Conservation Science and Practice.
- Kutub Gandhi, **Sofia Eleni Spatharioti**, Scott Eustis, Sara Wylie and Seth Cooper, (2022) *Performance of Paid and Volunteer Image Labeling in Citizen Science — A Retrospective Analysis*, In: 10th AAAI Conference on Human Computation and Crowdsourcing. (HCOMP2022)
- **Sofia Eleni Spatharioti**, Sara Wylie and Seth Cooper, (2021) *Exploring Q-Learning for Adaptive Difficulty in a Tile-based Image Labeling Game*, In: 3rd IEEE Conference on Games. (COG2021)
- **Sofia Eleni Spatharioti**, Borna Fatehi, Melanie Smith, Avery Rosenbloom, Josh Aaron Miller, Magy Seif El Nasr, Sara Wylie, Seth Cooper, (2020) *Tile-o-Scope AR: An Augmented Reality Tabletop Image Labeling Game Toolkit*, In: 15th International Conference on the Foundations of Digital Games. (FDG2020)
- **Sofia Eleni Spatharioti**, Sara Wylie and Seth Cooper, (2019) *Using Q-Learning for Sequencing Level Difficulties in a Citizen Science Matching Game*, In: Extended Abstracts of the 2019 Annual Symposium on Computer-Human Interaction in Play. (CHIPLAY 2019)
- **Sofia Eleni Spatharioti** and Seth Cooper, (2017) *On Variety, Complexity, and Engagement in Crowdsourced Disaster Response Tasks*, In: 14th International Conference on Information Systems for Crisis Response and Management. (ISCRAM 2017)
  Best Student Paper Award Nomination

Awards, Service & Misc.

- PC Member: FDG ['17, '21]. Reviewer: CHI ['22-'24], IEEE Transactions on Games '20, CHI PLAY '19, ISCRAM '18.
- Awarded: Khoury College of Computer Sciences PhD Community Service award (2021).
- Awarded: Dissertation Completion Fellowship from Northeastern University (2020).
- Organizer: NEU's Khoury PhD Women Group, Khoury PhD Social Hour, MSR-NYC Giving Committee.
- Nominated: Outstanding Graduate Student Research Award (2018).
- Invited to present Cartosco.pe at a citizen science exhibit at the Cleveland Museum of Natural History (2017).