

# Parikshit Solunke

✉ solunkeparikshit@gmail.com

in PariSolunke

🌐 <http://parisolunke.github.io/>

## Summary

I am a Computer Science Ph.D. student at NYU's Visualization Imaging and Data Analysis Research Center (VIDA), under the guidance of Dr. Claudio Silva. I specialize in creating end-to-end visualization tools to facilitate the analysis of complex multimodal datasets. My current research centers on applying visualization techniques in the domains of Explainable AI, Urban Analytics, and Augmented Reality.

## Education

- 2022 – \* **Ph.D. Computer Science, New York University, GPA: 3.92**  
Advisor: Dr. Claudio Silva at NYU's Visualization, Imaging and Data Analysis Center
- 2020 – 2022 **M.S. Computer Science, University of Illinois at Chicago, GPA: 3.87**  
Honors: Magna Cum Laude
- 2014 – 2018 **B.E. Computer Engineering, University of Pune, Grade: First-Class**

## Publications

- **Parikshit Solunke**, Vitoria Guardieiro, Joao Rulff, Peter Xenopoulos, Gromit Yeuk-Yin Chan, Brian Barr, Luis Gustavo Nonato, Claudio Silva. MOUNTAINEER: Topology-Driven Visual Analytics for Comparing Local Explanations. *IEEE Transactions on Visualization and Computer Graphics*
- Sonia Castelo, Joao Rulff, **Parikshit Solunke**, Erin McGowan, Guande Wu, Iran Roman, Roque Lopez, Bea Steers, Qi Sun, Juan Bello, Bradley Feest, Michael Middleton, Ryan Mckendrick, Claudio Silva. HuBar: A Visual Analytics Tool to Explore Human Behaviour based on fNIRS in AR guidance systems. *IEEE VIS 2024*
- Ethan Brewer, Giovanni Valdrighi, **Parikshit Solunke**, Joao Rulff, Yurii Piadyk, Zhonghui Lv, Jorge Poco, Claudio Silva. Granularity at Scale: Estimating Neighborhood Socioeconomic Indicators from High-Resolution Orthographic Imagery and Hybrid Learning. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*

## Projects

- **Mountaineer**, <https://github.com/PariSolunke/mountaineer>, (IEEE TVCG)
  - Developed in collaboration with Capital One, "Mountaineer" is a Topology-Driven Visual Analytics tool designed to facilitate the comparison of Machine Learning Explanations.
  - As the First Author, I held comprehensive responsibilities throughout the project, including:
    - \* Conceptualization and design of the user interface
    - \* Implementation and development of the tool, applying topological concepts and visualization towards comparing ML Model Explanations
    - \* Designing case studies and conducting interviews with industry experts to evaluate the tool.
- **HuBar**, <https://github.com/VIDA-NYU/HuBar>, (IEEE VIS 24)
  - Contributed to HuBar, a tool that integrates cognitive workload and multimodal sensor data for analyzing and comparing performer behavior during AR assisted-task performance, as part of DARPA's Perceptually-enabled Task Guidance (PTG) Project.

- Designed and developed the visual interface for HuBar and assisted in gathering expert feedback through interviews.
- **GDPFinder**, <https://github.com/VIDA-NYU/GDPFinder>, (IEEE JSTARS)
  - Estimating neighborhood well-being from high-res satellite imagery using supervised and semi-supervised learning techniques.
  - Fine tuned a ResNet-50 based architecture within the supervised methodology, facilitating predictions of GDP, educational attainment, and population density at a block level in US cities.
  - Designed a visualization tool to interpret and analyse auto-encoder and clustering results in the semi-supervised methodology.
- **OpenSpace**, <https://github.com/Parisolunke/OpenSpace-AppleSilicon>
  - Developed an Apple silicon compatible port for OpenSpace, a data visualization software to visualize the entire known universe.
  - Expanded compatibility creates new research opportunities, including developing hybrid natural language and VR-based interaction methods, particularly for the Apple Vision Pro.

*For an extended list of projects, please see my website at [parisolunke.github.io](https://parisolunke.github.io)*

## Employment History

- 2022 – \* **Research Assistant**, New York University.
  - Conducting advanced research in visualization and data analytics, designing and developing visual analytics tools for machine learning explainability, augmented reality, and urban analytics.
  - Collaborated with industry and research partners, contributing to publications at top IEEE conferences and journals.
- Summer 2021 **Web Development Intern**, Aspire360 (now Allianse), New York, NY
  - Developed and shipped responsive frontend features for Aspire360's core product using React.js, JavaScript, and CSS.
  - Architected backend services with Flask (Python), designed PostgreSQL schemas, and created GraphQL APIs facilitating scalable and efficient data exchange.
- Fall 2024 **Graduate Course Assistant**, Information Visualization, New York University
- Fall 2021 **Graduate Teaching Assistant**, Programming Design II, University of Illinois at Chicago

## Skills

- Programming Languages **JavaScript**, Python, R, SQL
- Tools and Libraries **PyTorch**, D3.js, React, Pandas, scikit-learn, Unity, OpenGL
- Technical Expertise **Data Visualization**, Machine Learning, Data Analytics, Web Development