# Jon Saad-Falcon

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## Education

**Georgia Institute of Technology (Georgia Tech)** - Atlanta, GA                                    August 2018 - May 2022
*B.S. - M.S. in Computer Science*                                                                                                    **GPA: 3.96**
- **Minors:** Mathematics and Linguistics
- **Study Abroad:** Berlin Summer Program at the Technische Universität Berlin (Summer 2019)
- **Undergraduate Thesis:** PeopleMap: NLP and Visualization Tool for Mapping Out Researchers
- **Scholarships:** Stamps President's Scholarship (premier full-ride scholarship)

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## Research Experience

**Stanford University,** Stanford Artificial Intelligence Laboratory, Palo Alto, CA                  *August 2022 - Present*
*Research fellowship with Christopher Potts and Matei Zaharia*
- Exploring domain adaptive techniques for information retrieval models to improve zero and few-shot accuracy
- Designing techniques for augmenting language models with retrieval techniques from PubMed and Wikipedia knowledge bases

**Allen Institute for Artificial Intelligence (AI2),** Semantic Scholar, Seattle, WA                 *August 2021 - August 2022*
*Predoctoral Young Investigator with Doug Downey and Daniel Weld*
- Designed new efficiency techniques for caching and reusing sequence representations in language models
- Constructed search engine for exploring challenges and future directions within COVID-19 literature
- Built clustering algorithms for accelerating the rate of hypothesis generation and literature-based discovery

**Stanford University,** Center for the Study of Language and Information (CSLI), Palo Alto, CA       *June 2021 - August 2021*
*Research internship with Christopher Potts and Matei Zaharia*
- NSF-Funded REU opportunity at the Stanford Artificial Intelligence Laboratory (SAIL)
- Constructed new benchmark dataset for naturalistic, technical question-answering models
- Experimented with new architectures and retrieval strategies for the ColBERTv2 model

**Goldman Sachs,** Global Investment Research, New York City, NY                                     *July - August 2020*
*Summer Research Analyst*
- Initiated independent project using quantitative techniques and NLP tools to perform valuation of companies
- Collaborated with traders and external clients to develop new automated trading strategies
- Assisted energy sector research team as they advise corporate clients on financial decisions

**Human-Centered Artificial Intelligence Research,** Georgia Tech, Atlanta, GA                       *August 2019 - May 2021*
*Research assistant with Polo Chau and Diyi Yang*
- Led project to build visual, explorable map of researchers and their work using textual embedding techniques
- Explored strategies for predicting and visualizing energy consumption in deep learning models using PyTorch and Svelte.js
- Constructed open-source, graph-based application for scientific literature exploration used by over 1000 students

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## Publications

[1]: *Embedding Recycling for Language Models*
     **Jon Saad-Falcon**, Amanpreet Singh, Luca Soldaini, Mike D'Arcy, Arman Cohan, Doug Downey
     *Preprint, under review, arXiV:2207.04993, 2022*
[2]: *A Search Engine for Discovery of Scientific Challenges and Directions*
     Dan Lahav, **Jon Saad-Falcon**, Bailey Kuehl, …, Polo Chau, Diyi Yang, Eric Horvitz, Daniel Weld, and Tom Hope
     *AAAI 2022,* **Oral Presentation**
[3]: *ColBERTv2: Effective and Efficient Retrieval via Lightweight Late Interaction*
     Keshav Santhanam*, Omar Khattab*, **Jon Saad-Falcon**, Christopher Potts, Matei Zaharia
     *NAACL 2022*
[4]: *Visual Exploration of Literature with Argo Scholar*
     Kevin Li, Haoyang Yang, Evan Montoya, Anish Upadhayay, Zhiyan Zhou, **Jon Saad-Falcon**, Polo Chau
     *CIKM Demo Paper 2022*

[5]: *Argo Scholar: Interactive Visual Exploration of Literature in Browsers*
   Kevin Li, Haoyang Yang, Anish Upadhayay, Zhiyan Zhou, **Jon Saad-Falcon**, Polo Chau
   *IEEE VIS 2021*
   **VAST Best Poster Research Award, Honorable Mention**

[6]: *EnergyVis: Interactively Tracking and Exploring Energy Consumption for ML Models*
   Omar Shaikh, **Jon Saad-Falcon**, Austin Wright, Nilaksh Das, Scott Freitas, Omar Asensio, Polo Chau
   *ACM CHI 2021*

[7]: *Mapping Researchers with PeopleMap*
   **Jon Saad-Falcon**, Omar Shaikh, Zijie Wang, Austin Wright, Sasha Richardson, Polo Chau
   *IEEE VIS 2020*
   **VAST Best Poster Research Award, Honorable Mention**

[8]: *Examining the Ordering of Rhetorical Strategies in Persuasive Requests*
   Omar Shaikh, Jiaao Chen, **Jon Saad-Falcon**, Polo Chau, Diyi Yang
   *Findings of EMNLP 2020*

## Honors and Awards

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| **Fulbright Scholarship, Research Award,** U.S. State Department and German Federal Foreign Office | Spring 2022 |
| **Knight-Hennessy Scholarship, Finalist,** Stanford University | Spring 2022 |
| **Donald V. Jackson Fellowship,** Georgia Tech | Spring 2021 |
| **President's Undergraduate Research Award,** Georgia Tech | Fall 2020 |
| **Summer Venture in Management Program (SVMP)**, Harvard Business School | Spring 2022 |
| **Computer Science Research Mentorship Program,** Google | Spring 2021 |
| **D.E. Shaw Nexus Fellowship,** D.E. Shaw and Co. | Fall 2020 |
| **U.N. Millennium Fellowship,** United Nations | Fall 2021 |

## Leadership and Community Engagement

**Georgia Tech Venture Capital Fund,** Co-founder and Student Director                    *January 2021 - July 2022*
- Collaborated with Georgia Tech president's office and alumni association to establish first GT-backed VC fund
- Created educational curriculum for teaching 40+ students on the fundamental strategies of venture capital funds
- Raised an inaugural $10+ million early-stage fund that started supporting Georgia Tech startups in Spring 2022

**Computer Science Outreach Club,** Founding Member and Volunteer                    *July 2020 - July 2022*
- Developed coding workshops and lectures to teach 50+ underprivileged youth from Atlanta-area highschools
- Assisted students in their college application process as well as guide their preparation for big tech summer programs

**Outdoor Recreation at Georgia Tech,** Expedition Leader                    *August 2018 - May 2022*
- Coordinated and led multi-day expeditions for dozens of Georgia Tech students across the U.S.
- Taught classes in survival skills, wilderness first aid, expedition leadership, and advanced cascading

## Skills

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| **Programming:** | Python, Java, and Javascript (advanced), Scala (intermediate), C and Assembly (proficient) |
| **Software:** | PyTorch, TensorFlow, Keras, Apache Spark, Svelte.js, React.js, Node.js |
| **Communication:** | presentations, conference papers, technical reports, lab write-ups, research posters |
| **Spoken Languages:** | English (native), Spanish (native), Arabic (beginner), French (beginner) |