

SUMIT SRIVASTAVA

Computer Science Researcher & Engineer | CTO

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📍 Helmond, The Netherlands

in linkedin.com/in/sumit-srv



PROFESSIONAL SUMMARY

- A passionate computer scientist with 4 years of academic research experience in Artificial Intelligence, focusing on Human Computer Interaction (HCI) and Natural Language Processing (NLP).
- Experience in defining research goals and executing them.
- 7 years of experience in building high-traffic, large-scale enterprise software applications.
- Proven ability to lead cross-functional teams and continuous interaction with global stakeholders.

EXPERIENCE

Chief Technology Officer (part-time)

BrainBite.ai

📅 December 2024 – Current

📍 Remote

- Responsible for defining the technology goals for the company.
- Responsible for architecture decisions for the Artificial Intelligence vertical.
- Led the improvement of the reliability of various content generation modules.
- Established evaluation methodologies (automatic and manual) for the AI systems.

Main skills and technologies: Team leading, technology goals, Artificial Intelligence (LLMs, RAG, LLM-as-a-judge, Red Teaming)

Doctoral Researcher

University of Twente

📅 September 2020 – November 2024

📍 Enschede, The Netherlands

- Research on a conversation personalization method called lexical alignment focused on Explainable Artificial Intelligence (XAI).
- Design and implement textual conversational agents that offer interactive and personalized explanations.
- Conducted user research studies investigating the effects of lexical alignment in conversational agents on understandability, persuasiveness, trust, cognitive load, and information uptake.
- Researched a generator-discriminator model (Large Language Model based) for controllable lexical alignment in conversational agents.
- Published three papers as the first author at leading peer-reviewed journal and conferences.
- Supervised eight MSc and BSc students resulting in three papers and posters, and one journal paper is in progress.

Main skills and technologies: Research (design, implementation, execution, data analysis), Natural Language Generation, Language Models (Large and statistical), Python, RASA, DialogFlow, Spacy, NLTK.

Master of Science Researcher in Artificial Intelligence

Katholieke Universiteit Leuven

📅 Sep, 2019 – May, 2020

📍 Leuven, Belgium

KEY ACHIEVEMENTS

- **Highly adaptive technology evangelist**
Extensive experience in academia (two master's, PhD candidate) and industry (7 years of working with start-ups).
- **Published at high quality journals and conferences**
 - One paper published at the journal Elsevier Computer Speech & Language. One paper each at the conferences IUI 2023, and UMAP 2024.
 - One paper under review at the Cognitive Science journal.
 - Mentored multiple MSc and BSc students leading to three papers and posters at reputed conferences and workshops.
- **Successful team leader**
Led the revamping of a business-critical service to ensure high availability and stability (Bidder service - MiQ Digital). Built and led a high-performing team from scratch (MiQ Digital). Led the optimization of a real-time service handling 1.5 million requests per second. Achieved a latency of 2 ms and 1 ms for 99% and 95% of the requests, respectively.

SKILLS

Experimental Research, Scientific Writing

Statistical Analysis, Hypothesis Testing

Research Planning, Research presentation

Dialogue systems (RASA, Google DialogFlow)

Artificial Neural Networks, Deep Learning

Transformer-based models

OpenAI Whisper (ASR)

Java (Spring, Hibernate, JPA, Junit, Mockito)

Python: Pandas, Flask, Socket-io

Scikit-learn, PyTorch

MySQL, PostgreSQL, MongoDB

AWS Redshift

Git (Github, Bitbucket, Gitlab)

AWS: Lambda, IAM, Beanstalk

AWS: Cost Management, VPC

- Topic: Metaphor interpretation (NLU) using Theory of Mind (ToM) at scale.
- Conducted research on automated interpretation of simple metaphors.
- Used Bayesian inference (Rational Speech Act model) and a large-scale concept map **ConceptNet**.
- Proposed and developed the research topic independently.

Main skills and technologies: Research, Natural Language Processing (NLP), Cognitive Science, Probabilistic modeling, Python, NLTK, SpaCy.

Team Manager and Technical Lead

MiQ Digital

📅 January 2017 – September 2019 📍 Bangalore, India

- Led and mentored a team of seven passionate software engineers.
- Led the development and maintenance of a cluster of seven software services.
- Overlooked the revamp of a real-time advertisements bidding service handling 1.5 million requests per second.
 - Migration to an event-driven architecture backed by an appropriate HTTP server.
 - Achieved a latency of 2 ms and 1 ms for 99% and 95% of the requests, respectively.
 - Migrated a component responsible for real-time lookups from files to PostgreSQL.
 - Set up a low-latency and high throughput distributed system of PostgreSQL servers.
 - I contributed to the improvement in performance of an open-source library to fetch data from PostgreSQL.
- Devised code and wiki documentation standards and overlooked its execution across the company.

Main technologies: Java, Amazon Web Services, Appnexus cloud, MySQL, PostgreSQL, Apache Camel, Java Mission Control, Perf-top, Docker, Vert.x, Google DV360

Senior Software Engineer

MiQ Digital

📅 January 2015 - December 2016 📍 Bangalore, India

- Part of a team responsible for the development of a 'Real Time Bid Modifier' service handling up to 1.5 million requests per second.
- Revamped almost 70% of an interface service (back end and front end), updating the coding standards and upgrading to the latest libraries, and modularisation to improve efficiency and reduce redundancy.
- Designed and implemented a horizontally scalable service (Master-Slave) that compressed and transported logs up to 90 TB daily from the servers to AWS S3.

Software Engineer

MiQ Digital

📅 September 2013 – December 2014 📍 Bangalore, India

- Designed and implemented a service for fetching/locating data through different protocols, processing and storing them on AWS S3 and Redshift database.
 - For 12+ different protocols.
 - For 30+ data sources with different data types and custom processing.

SKILLS

Appnexus(Xandr), Google Cloud

Nginx, Apache Tomcat, Vert.x

HTML5 & CSS

LaTeX

LANGUAGES

English

Hindi

Dutch



EDUCATION

Doctor of Philosophy - Computer Science

University of Twente, The Netherlands

📅 September 2020 – Ongoing

Master of Science - Artificial Intelligence

Katholieke Universiteit Leuven, Belgium

📅 September 2019 – August 2020

Master of Technology:

Human-Computer Interaction

Institute of Information Technology
Allahabad, India

📅 August 2010 – June 2012

Bachelor of Technology: Computer

Science & Engineering

Uttar Pradesh Technical University, India

📅 August 2006 – May 2010

REFEREES

Dr. Mariët Theune

@ m.theune@utwente.nl

✉ University of Twente, The Netherlands

Dr. Alejandro Catala

@ alejandro.catala@usc.es

✉ University of Santiago de Compostela,
Spain

Prof. Dr. Chris Reed

@ chris@arg.tech

✉ University of Dundee, The United Kingdom

- Mentored new contributors throughout my service at MiQ Digital after moving to other roles.

Main technologies: Java, Apache Camel, AWS S3, AWS Redshift

Software Engineer | Associate Software Engineer

Apostek Softwares

📅 July 2012 – August 2013

📍 Bangalore, India

- Worked on a project comprising a mobile advertising platform and central point currency system where users earn points to watch ads and redeem them for various rewards.
- Contributed to critical enhancements, bug fixes, and the addition of new features across different portals related to the project.

Main technologies: Ruby on Rails, Cassandra, MySQL, HTML, CSS, JavaScript.

PUBLICATIONS

Journal

- Srivastava, Sumit et al. (2024). "Measuring and implementing lexical alignment: A systematic literature review". In: *Computer Speech & Language*, p. 101731.
- **Sumit Srivastava**, Mariët Theune, Alejandro Catala, and Chris Reed (n.d.). "Your word against mine: Lexical alignment in Argumentative Dialogues with a Conversational Agent (**Under Review**)". In: *Cognitive Science* ().

Conferences & Workshops

- **Sumit Srivastava**, Mariët Theune, and Alejandro Catala (2023). "The role of lexical alignment in human understanding of explanations by conversational agents". In: *Proceedings of the 28th International Conference on Intelligent User Interfaces*, pp. 423–435.
- **Sumit Srivastava**, Mariët Theune, Alejandro Catala, and Chris Reed (2024). "Trust in a Human-Computer Collaborative Task With or Without Lexical Alignment." In: *Adjunct Proceedings of the 32nd ACM Conference on User Modeling, Adaptation and Personalization (UMAP Adjunct '24)*, July 1–4, 2024, Cagliari, Italy. ACM, New York, NY, USA, 9 pages. ACM.
- **Sumit Srivastava** and Ramesh Chandra Tripathi (2013). "Real time mono-vision based customizable virtual keyboard using finger tip speed analysis". In: *Human-Computer Interaction. Interaction Modalities and Techniques: 15th International Conference, HCI International 2013, Las Vegas, NV, USA, July 21-26, 2013, Proceedings, Part IV* 15. Springer, pp. 497–505.
- Wang, Boxuan, Mariët Theune, and **Sumit Srivastava** (2023). "Examining Lexical Alignment in Human-Agent Conversations with GPT-3.5 and GPT-4 Models". In: *International Workshop on Chatbot Research and Design*. Springer, pp. 94–114.
- Zhao, Zhenqi et al. (2024). "Exploring Lexical Alignment in a Price Bargain Chatbot." In: *ACM Conversational User Interfaces 2024 (CUI '24)*, July 8–10, 2024, Luxembourg, Luxembourg. ACM, New York, NY, USA, 12 pages. ACM.