Sagar **Joglekar**, PhD

Data Science, Practical A.I.

sagar.joglekar@gmail.com sagarjoglekar.com

Letchworth Garden City, UK: SG6 4TS

I love to tinker and hack together stuff to solve problems about the quantification of social processes from large-scale data. I am keen on driving impactful solutions for data science problems by pragmatically leveraging advances in representation learning and machine learning research. I bring forth over 7 years of experience from different aspects of technology development: from research, to consulting, to engineering and development.

Research Interests

Representation learning, Computer vision, Complex networks, Computational user behaviour modelling, Natural language processing, Practical A.I.

Education

Doctor of Philosophy (Ph.D.), Computer Science, **King's College London, United Kingdom** 2019

Master of Science (M.S.), Electrical and Computer Engineering, **U.C. Santa Barbara, U.S.A.** 2012

Bachelor of Engineering (B.E.), Electronics Engineering, **University of Pune, India** 2008

Research Publications & Patents

30+ scientific publications in peer-reviewed conference proceedings and journals, and two patents filed for innovations in digital covergence and collaboration space

Experience

Research Scientist, Nokia Bell Labs, Cambridge, UK 06/19–Now

As a member of the Bell Labs Social dynamics team, I work with ideas that try to redefine our relationship with data. My role primarily spans two dimensions:

- **External impact** I develop methods and frameworks which could help us quantify real social phenomena using large scale data and tools from statistics, Computer vision, Natural language processing, deep learning, and complex networks. Most problems that I deal with belong to the fields of social dynamics and urban informatics. For example:
  - Build models that can predict health outcomes at geo-spatial scales using social media data and openly available NHS GP prescriptions data.
  - Quantify intangible and subjective properties, like urban aesthetics and gentrification, using Streetview images or openly available satellite images.
  - Use openly available social media text data (Reddit) to predict prevalence of mental health diseases at geo-spatial scales.

  The work is expected to be communicated externally through scientific publications, journal articles, and public talks.
- **Internal impact** I develop solutions for data processing, sensing, and sense-making problems covering a wide range of applications inside Nokia's internal ecosystem. The work generally entails design and development of Proof of Concepts (PoC) using scalable technology stack and solutions that incorporates cutting edge research outputs from academia and the team. These prototypes are generally deployed for internal use, either in the form of micro services, or stand-alone web applications.

Research Intern, Nokia Bell Labs, Cambridge, UK 06/17–11/17

As a part of my summer Internship at Bell labs, I worked on explainable and visualizable deep learning models for quantifying the perception of intangible attributes like beauty, safety and liveliness.

Head of Research, Firedrop.ai, London, UK 06/16–06/17

I conducted research in order to understand feasibility of different machine learning algorithms for Firedrop products. I helped the team adopt advanced machine learning research into systems that solve optimization problems. The end goal was always to provide most value to the customers by augmenting different creative processes in packaging design, website design, asset indexing and more.

Data science consultant, HackMasters, London, UK 03/16–05/19

I consulted HackMasters in the capacity of a data scientist/engineer on projects that covered areas of data governance, data driven strategy, or designing/prototyping Machine Learning driven systems for their clients. Some of their clients included government enterprises, large consultancy firms, or large FMCG firms.

Ph.D. Fellow (King's India Scholar), King's College London, UK 09/15–12/19

My research at King's dealt with developing new methods for quantifying the intangible human processes from web scale data. I developed new methods and metrics in the fields of complex networks, machine learning, and computer vision, which provided a descriptive and predictive approach for quantifying these intangible processes. The outcome was a set of published papers on understanding the measurement of the subjective human perceptions – like the sense of beauty, safety and emotional support – from large scale data.

Senior Software Engineer, Citrix Systems, Santa Barbara, U.S.A 02/12–09/15

My job at Citrix dealt with design and implementation of proprietary network communications stack and platforms libraries for Android, iOS and the web. As a team we worked on implementing Citrix's client side network communications platform code. Some of the salient projects I have contributed to are as follows:

- I was a major contributor in design and development of the network communications platform for our newly launched GotoMeeting web client. I designed and implemented a brand new protocol for bandwidth optimized computationally efficient screen sharing for HTML5 (web) and mobile.
- Develop platform network communications stack for iOS that presents an API for products to exercise and communicate with Citrix infrastructure. The platform is currently used in Citrix's SaaS products (e.g. Convoi, Talkboard, GotoMeeting, and GotoAssist) for audio and screen sharing media communications.
- Part of the inventor team for GoToSeeit, which augments remote assistance products like GotoAssist, with real-time augmented reality annotations and audio. This innovation was incorporated into the existing GoToAssist product and has proven to be a highly impactful tool to support real world technical support use cases.

Engineering Intern, Citrix Systems, Santa Barbara, U.S.A 06/11–12/11

My internship dealt with porting and modification of proprietary runtime communication libraries and automated testing frameworks for Android.

Systems and Bio-imaging Lab, Santa Barbara, U.S.A 01/11–06/11

As a graduate student researcher, I worked on research and development of a system to incorporate HDR imaging in biological fluorescent microscopy. This project was part of my research at Systems and Bio-Imaging Lab at UCSB. The main aim of this project is to enable High Dynamic Range microscopy for dynamic samples.

Research Engineer, Infosys Research Labs, Pune, India 07/08–07/10

My job dealt with research and development of algorithmic solutions, exploring possibilities and conducting research in Digital Convergence. One of my major responsibilities was research, design and development of some intellectual properties and solutions that involve Computer vision based algorithms

Technical skills

- **Programming languages:** Python, Java, C++, Javascript
- **Machine Learning frameworks:** Pytorch, OpenCV, TorchVision, Tensorflow, Scikit-Learn
- **Back-end frameworks:** Nodejs , Django, Flask, Docker
- **Databases:** Mongo, SQL
- **Data analysis and mining:** Pandas, Numpy, PySpark, GiRaph , NetworkX
- **Project management:** Agile , Scrum, Kanban

Demos

FaceLift :
Beautifying cities using crowd sourced urban perception :
Humane-AI
Adding humanity to dialogues in healthcare, using A.I. :
Meetcues
Bringing cues of the face-to-face interaction, into our online meetings :
Vitality from the Sky
Testing Jane Jacob's vitality theory, at scale, using satellite images

Languages **English, Marathi**: Native proficiency, **Hindi** : Conversational proficiency

Personal interests Sci-Fi, Reading, Philosophy, Playing Guitar, Astro-photography, Astronomy