SANDEEP KUMAR, PhD

Applied Machine Learning Scientist

+1 4372301684 sandeep25789@gmail.com
Toronto, ON, Canada

https://www.linkedin.com/in/dr-skumar

sandeep13712 (Sandeep Kumar) (github.com)

EDUCATION

Ph.D., Predictive Modeling
IIT Bombay, India
2012-2017

BTech, Computer Engineering
ZHCET, AMU, Aligarh, UP, India
2007-2011

Diploma Engg, Computer Engineering
University Poly., AMU, Aligarh, UP India
2004-2007

SKILLS

Python, Pandas, Django, Deep learning, Statistics, scientific project management

GCP, Bash Script, AppScript, Bioinformatics

TensorFlow, JavaScript, ML – Algorithms

PHP, PySpark, D3, Google Data Studio

AWS

AWARDS

First Rank in Diploma - Computer Engineering (2004)

Research Fellowship (GATE 2011, 99.8 Percentile)

Travel awards from the following institutes:

Ohio State University, USA (2016); DST, India (2011 & 2016); EMBO, Germany (2015 and 2016); ICTP, Italy (2015); Welcome Trust, UK (2015)

Applied Machine Learning Scientist with 8+ years of experience in predictive modeling and machine learning tool development.

I have extensive experience in data analytics and management, software tool development for automated analysis, have mentored 6 master students. I have received awards from premier research institutes from the USA, UK, Germany, Italy, and India.

EXPERIENCE

Postdoc Researcher | Jun 2017 - Dec 2020 | Machine Learning
Lunenfeld Tanenbaum Research Institute, Toronto, Ontario, Canada

- Developed cloud-based platform **https://www.provixpre.com** for automated analysis and investigation lead generation for high dimensional biological datasets. It reduces analysis time from several days to a few minutes.
- Mentored 4 master students, all of them are now doing a Ph.D.
- Developed novel tools to infer causality from 20k+-D datasets.

Research Associate | Jan 2017 – Jun 2017 | Statistical Modeling
IIT Bombay, Mumbai, Maharashtra, India

- Developed Monte Carlo models (python) of multiscale systems
- Managed 2 projects and finally published scientific articles describing the key findings from these projects.

Ass. System Engineer | Jul 2011 – Jul 2012 | C#-Test Automation
Tata Consultancy Services Ltd, Pune, Maharashtra, India

- Testing of Microsoft's online service monitoring framework
- Worked with Microsoft@Redmond team to launch Windows 8 Appstore monitoring tools
- Developed XML parser in C# for generating release script/note from code itself

CERTIFICATES AND ASSOCIATION

Professional Certificate: TensorFlow Developer
Coursera | Sep 2020
TensorFlow: Data and Deployment Specialization
Coursera | Oct 2020

Member: Toronto Machine Learning Society
Member: ACM Special Interest Group on Artificial Intelligence

RELEVANT PUBLICATIONS

- A. Ayyaz, **S Kumar**, et al., Single-Cell Transcriptomes of the Regenerating Intestine Reveal a Revival Stem Cell, **Nature**, 2019
- **S Kumar** et al., MMP Secretion Rate, and Inter-invadopodia Spacing Collectively Govern Cancer Invasiveness, **Biophysical Journal**, 2018
- **S Kumar** et al., Proteolytic and non-proteolytic regulation of collective cell invasion: tuning by ECM density and organization, **Scientific Reports**, 2016
- **S Kumar** et al., Factor Analysis using two stages Neural Network Architecture, **International Journal of Machine Learning and Computing**, 2012
- **S Kumar** et al., Applications of AI in Home Automation, **IACSIT International Journal of Engineering and Technology**, 2012
- **S Kumar** et al., IPAC System For Controlling Devices over the Internet: **Intelligent Communication Systems**, 2010
- **S Kumar** et al., Samvadak-A way to Communicate, **IEEEXplore** 2011
- **S Kumar** et al., Universal Digital Device Automation and Control, **IEEEXplore** 2009
- **S Kumar** et al., Location Based Services using Android (LBSOID), **IEEEXplore** 2009

SELF-STARTED PROJECTS

- **autoPost:** this application creates an image for social media posting and creates a post on Facebook, Twitter, and Linkedin. Currently used by 3 early-stage startups.
- **researchPaperParsing:** this Google AppScript-based tool scan a scientific document (PDF/image) and extract keywords that might be relevant for the analysis of experimental data. This tool is currently being used in Provixpre.com.
- **nLoop:** I developed this Django-based basic Slack-like application for communication with the distributed client. It is also being used by multiple early-stage startups.
- **smartTradingAlgorithm:** I developed this python-based trading algorithm where 'equities can communicate with each other, and a trading decision is made based on 'collective agreement'. I am using this tool for managing my Coinbase Pro account.
- **Cultivator:** This is a Django/MySQL-based high-level framework that allows rapid development of web applications. It automates several aspects of Google AppEngine DevOps. This framework has several features including dynamic API creation, Link redirection, Access control, real-time HTML page creation, an in-built website search, etc.
- **docCreator:** This Google AppScript based tool fetches data from the database and creates a Google Doc file, HTML file, and PDF file. It is being used by one of the early-stage publishing company. It allows reducing the article preparation time from 3+ days to almost no time as the tool can be scheduled to run at a time without manual intervention.