# Sayali Kandarkar

+91-8097209056 | kandarkarsayali@gmail.com | Portfolio: LinkedIn, GitHub, Website

## OBJECTIVE

I strongly believe that magic happens at the intersection of multiple fields. My research interests lie at the intersection of Artificial Intelligence and Medicine. My goal is to leverage the potential of Machine Learning in many interdisciplinary fields, including Medical Imaging Diagnosis & Computational Genomics. As a long-term goal, I want to build systems to assist healthcare clinicians in detecting and preventing life-threatening diseases and neurological disorders.

## EDUCATION

**University of Mumbai,** K.J. Somaiya College of Engineering, Mumbai, India **Aug 2013 – July 2017**
Bachelor of Engineering in Information Technology, GPA: 8.2/10.0
Class Rank: **1 out of 120**
University Rank: **13 out of 5500**

## SKILLS

**Programming Languages:** Python, Java, C, C++, JavaScript, SQL, HTML5, CSS3
**Frameworks/Tools:** Git, Jenkins, Angular, Spring Boot, Pentaho, Drools, AWS, Kafka, Tableau, RASA
**Libraries:** TensorFlow, Keras, PyTorch, NumPy, Pandas, Matplotlib, Scikit-learn

## WORK EXPERIENCE

**JP Morgan Chase & Co, Mumbai | Associate Vice President, AI Research** **July 2017 – Present**

*Led and delivered several AI projects; organized seminars, hackathons as the technical head of the ML Ignite Community of Mumbai; spearheaded Agile Transformation for 100+ members global team, undertook cloud adoption and deployed applications in AWS; mentored 200+ freshers to build AI solutions for NGOs at Code for Good events.*

- **AWS DeepRacer**
  Developed a reinforcement learning model to train, evaluate and tune a 3-layer neural network controlling a virtual 1/18$^{th}$ scale race car; achieved a lap time of 6 seconds, securing **1$^{st}$ rank** in the firm-wide AWS DeepRacer League.
- **Check Fraud System**
  Built a CNN model based on the VGG-16 architecture to perform signature comparison thus, detecting check frauds; achieved accuracy of **96%** for American and **95%** for European signatures.
- **Symphony Chatbot**
  Developed a python chatbot using RASA framework to personalize response to users' questions, thus reducing manual support provided by the team by **70%.** Used SpacyTokenizer, CRFEntityExtractor, SklearnIntentClassifier as pipeline modules; Spacy, CountVector featurizers; Memoization, Keras, Mapping and Form policies.
- **Customer Churn Analysis**
  Built a Machine Learning model using Random Forest Classifier algorithm and XGBoost to predict the customer churn rate; obtained an accuracy of **93%**, thus helping the firm take measures to retain around **15%** of the clients.
- **Strategic Performance Calculation and Reporting Platform**
  Developed a dynamic real-time performance analytics platform, responsible for data management, contribution, and attribution, thus decommissioning a vendor application and saving firm licensing fee of **$1.8B** annually.

## INTERNSHIPS

**Research Innovation Incubation Design Labs | Research & Development Intern** **June 2014 – Nov. 2014**

- **Medical Resonance Image Analysis**
  Consulted with radiologists to understand brain cancer diagnosis; extracted relevant features from the MRI scans; built an artificial neural network to predict the presence of tumors in MRIs; achieved an accuracy of **83%.**

## ACADEMIC PROJECTS

**Brain Tumor Segmentation,** Independent Research **May 2021 – Sept. 2021**

- Trained a brain tumor segmentation model based on the U-Net architecture of CNN; the ground truth and predicted segmented regions of the 3024 MRI samples were compared; accuracy of **95.7%** was observed.

**Breast Cancer Detection System,** K.J. Somaiya **January 2017 – March 2017**

- Collected dataset from the UCI Machine Learning repository and used scikit library for finding correlations amongst features; employed Random Forest Classifier which resulted in a validation accuracy of **96%.**

**Plagiarism Checker,** K.J. Somaiya **Aug 2016 – June 2017**

- Implemented a plagiarism checker system for coding assignments; utilized the Decision tree classifier for comparison of the source code of documents to detect the plagiarized code; achieved an accuracy of **94%**; received "Best Poster" and "Project of the Year" awards by K.J Somaiya.

## PEER-REVIEWED PUBLICATIONS

- "**Preterm Birth Detection Using Convolutional Neural Networks"** in International Journal of Innovative Research in

Computer and Communication Engineering, 2021, vol 9, Issue 9.

- **"Brain Tumor Segmentation Using U-NET Based Convolutional Neural Network"** in International Journal of Innovative Research in Computer and Communication Engineering, 2021, vol 9, Issue 9.
- **"A Survey on Clickjacking and Tapjacking"** in International Journal of Innovative Research in Computer and Communication Engineering, 2015, vol 3, Issue 12.

## VOLUNTEER EXPERIENCE

**IndiaShield | Founding Member** **April 2021 – Present**

*Founded IndiaShield which is one of the largest COVID-19 emergency response efforts in India. The network of Life Savers has serviced over 48,000 requests in a short span of 22 days and helped save numerous lives during the harsh second wave of COVID-19 in India.*

**COVID-19 twitter bot**

- Developed a python bot to scrape tweets comprising available covid resources like oxygen, ICU beds, plasma etc; performed pre-processing using NLTK, spacy
- Integrated the data with AWS; enabled dynamic API calls with the help of Amazon API Gateway, AWS Lambda, and DynamoDB to store data and update covid website on runtime, thus helping **100k+** Indian citizens meet urgent needs; featured in **Forbes India** Issue for the same.

## INDUSTRIAL WORKSHOPS

**AI for Children, UNICEF** **November 2021**

- Participated in keynote sessions like 'Why AI matters for children' and 'Effective AI policies for children' presented by Valentina Rabanal – SDG Advocate at UNICEF and Armando Guio – Harvard university affiliate, respectively.

**AI Academy, JP Morgan** **May 2019 – October 2021**

- Learned about the ongoing development and research in the AI community; challenges faced by engineers and leaders in the industry applications of AI.
- Attended distinguished lectures such as "Power & Limits of Deep Learning" by Yann LeCun – VP & Chief AI Scientist, Facebook, "AI for Social Impact" by Milind Tambe – Director of AI for Social Good at Google Research, India, "Data for Good: Data Science at Columbia" by Jeannette M. Wing – Executive VP for Research and Professor of CS at Columbia University.

**Comprehensive Cancer Center, Case Western Reserve University** **July 2021**

- Attended Machine Learning meetings on topics such as "Artificial intelligence and imaging for personalized cancer treatment." Dr. Ruijiang Li, Assistant Professor at Stanford, presented them.

## TECHNICAL CERTIFICATIONS/COURSES

- AI in Healthcare Specialization - Introduction to Clinical Data, Introduction to Healthcare**,** Fundamentals of Machine Learning for Healthcare, Evaluations of AI Applications in Healthcare, AI in Healthcare Capstone from Stanford Medicine Center.
- Neural Networks and Deep Learning, Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization, Convolutional Neural Networks offered by DeepLearning.ai on Coursera.
- Intro to Machine Learning, Deep Learning Introduction from Udacity.

## ACTIVITIES & ACHIEVEMENTS

- Featured in the Forbes India Issue of May 2021 for starting IndiaShield - one of India's most significant COVID-19 emergency response efforts.
- "Excellence award" by JP Morgan for delivering a critical reporting application during COVID-19.
- Technical Lead of the ML Ignite – Data Science club at JP Morgan, Mumbai.
- As a Code for Good SME at JP Morgan, I led multiple teams of 6 candidates each through project ideation to execution; thus, helping them build innovative AI solutions for 40+ non-profit partners.
- Awarded "AWM Technology Award" by JP Morgan for spearheading ML and DL projects.
- Recipient of the K.J. Somaiya Merit Scholarship for being in the top 10% for four years from 2013-17.
- Technical Head Lead of CSI, Codechef Student Cell, one of the largest societies of K.J. Somaiya, 2015–16.
- Best Student, Outstanding Girl Student, and Student of the Year excellence award by K.J. Somaiya.
- Honoured with the "KJSCE Alumni Association Award" for mentoring freshers and presenting career advice seminars.