

# Param Bhavsar

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## EDUCATION

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### Pune Institute of Computer Technology, India

July 2015 - May 2019

*Bachelors of Engineering in Computer Engineering with First Class Distinction*

CGPA: 9.21/10

**Relevant Courses:** *Data Structures & Algorithms, Theory of Computation, Discrete Mathematics, Machine Learning, Artificial Intelligence & Robotics, Data Analytics, System Program & Operating System, Computer Networks, Cloud Computing*

## PUBLICATIONS

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### Forecasting GDP per capita of OECD countries using machine learning and deep learning models

*Conference Paper - Accepted and awarded Best Paper-Reviewer's Choice, IRTM 2022*

Vedant Bhardwaj, **Param Bhavsar**, Debasis Patnaik

### Audit and Compliance in Service Management using Blockchain

*Conference Paper, IEEE INDICON 2019*

Chinmay Ingle, Ashwin Samudre, **Param Bhavsar**, P. S. Vidap

## EXPERIENCE

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### HSBC

July 2019 – Present

*Senior Software Engineer - Commercial Banking*

*Pune, India*

- Leading the country onboarding projects. Responsible for designing and integrating the support for new countries, transaction types, and payment reports into the HSBC commercial banking staff application and corresponding downstream system.
- Serving as SME for HSBC digital transformation agile PODs. Responsible for detail-level design review, code review, providing domain and technical knowledge, and helping in resolving technical challenges during development.

*Software Engineer - Commercial Banking*

- Design and build the Push Notification Service for the payments using Spring Boot, Kafka, Google Cloud Platform. The service is consumed by commercial clients through the APIs and supports more than ten countries in the current phase. The project results in a 70% reduction in the client's high-value payment tracing calls and \$4 million per year in server and maintenance costs.
- Lead and implemented the AI-based language translation engine using a bidirectional encoder and consumed by commercial banking portals to support 20+ languages.
- Build the Payment Authorization Service for the single and bulk payments using Spring Boot, MuleSoft, and ReactJS, where the client can authorize payments at their end either through the HSBC portal or exposed API service. The project results in an 80% reduction in manual validation by the HSBC front office and supports more than 2 million customers with a 10% yearly growth.

### Google Summer of Code 2019 with TensorFlow

May 2019 – August 2019

*Student Developer*

*Remote*

- Design and build the machine learning library in Swift programming language called swiftML to support type safety in AI application development.
- Implemented the linear, tree-based, clustering, ensemble and naive-bayes machine learning algorithms.
- Documented and wrote detailed tutorials on the use of the library.

### BMC Software Inc.

October 2018 – May 2019

*Project Intern*

*Pune, India*

- Develop a Blockchain-based solution for transparent and secured auditing and compliance management in Service Management processes using Hyperledger Fabric framework.
- Architected and created the private Blockchain with dynamic consensus mechanism and developed the smart contract in the Go programming language.

## PROJECTS

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### Forecasting GDP per capita of OECD countries

- The project analyses the performance of different machine learning models and a deep learning model in forecasting annual Gross Domestic Product (GDP) per capita (PPP) data of 33 OECD countries using past years' variables covering various growth, development, health, energy, finance, and social indicators.
- The custom Deep Neural Network has shown the best result amongst all the considered models on both the training and testing data with a coefficient of determination of 0.99809.

### Autonomous Ephemeris Predictions By Navigation Receivers

- Develop an intelligent forecasting model that is computationally lightweight, fast, and highly accurate in predicting the satellite position for the next five days.
- Ranked second among the 40 teams all over India in the Smart India Hackathon 2019 at the Indian Space Research Organization.

### Real-Time Video To Audio Converting AI Assistant

- Developed an artificial intelligence-enabled AI assistant in the form of an android application for visually impaired people to visualize the surrounding environment in a medium of real-time audio using a combination of CNN and LSTM models.
- Trained on the Flickr30k dataset and model by utilizing TensorFlow, Text To Speech API, and Dialogflow.

### Artistic Image Generation Using Generative Adversarial Networks (GANs)

- Construct the hybrid model of Deep Convolutional GAN and Wasserstein GAN to generate domain-specific high feature paintings of nature.
- As a result, the hybrid model can understand complex features and generate painting to fool a discriminator to differentiate between original and fake artwork.

## TECHNICAL SKILLS

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- **Programming Languages:** Java, Python, C, C++, Swift, Go
- **Web Development:** ReactJS, JavaScript, PHP, CSS, HTML
- **Databases:** MySQL, PostgreSQL, MongoDB, Firebase
- **Tools & Frameworks:** Google Cloud Platform, Android, Spring Boot, MuleSoft, Docker, Kubernetes, Git
- **Machine Learning Libraries:** TensorFlow, PyTorch, Scikit-Learn, Keras, Transformers
- **Operating System:** Linux (Unix), Windows, macOS

## CO-CURRICULAR AND EXTRA-CURRICULAR ACTIVITIES

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- **Founding member** of the **NumFOCUS project incubator committee**. We guide open-source scientific projects to grow, build a community and attract additional contributors. Also, provide all necessary support to incubate projects in their journey to fulfill the NumFOCUS affiliation project requirements.
- Served as a **Conference paper reviewer** at International Conference On Interdisciplinary Research in Technology & Management IRTM 2022.
- **Volunteered** at **ICML 2020**, worked with the organization team to help schedule the conference presentation, and provided support to the presenters during the paper and poster presentation.
- Served as a **Mentor** at **TensorFlow** organization during **Google-CodeIn 2019**. Guided, tutored, and reviewed the machine learning projects of more than 30 pre-university students.
- Ranked **4th** on Kaggle Leaderboard at **Google India Hackathon 2018** amongst 32 shortlisted teams to compete onsite for delivering a solution to the computer vision problems of Waste Segregation.
- Ranked **7th** in **Smart India Hackathon 2018** organized by Department of empowerment of persons with disability, ministry of social justice and empowerment.