**SAMUJJWAAL DEY**

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**EDUCATION**

**University of Illinois at Chicago, Illinois** Expected May 2021

**Master of Science in Computer Science**  GPA: 3.44/4

**University of Mumbai (VESIT)**, **India** Jul 2015 – Jun 2019

**Bachelor of Engineering in Computer Engineering** CGPA: 8.40/10

**TECHNICAL SKILLS**

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| **Proficient:** | Python, Java, HTML, CSS, JavaScript, NumPy, Pandas, BeautifulSoup, sklearn, Tkinter, D3.js, Three.js, SQL, Git, Azure ML Studio, Jupyter |
| **Familiar:** | C++, R, Octave, Scala, PHP, Bootstrap, JSON, PowerBI, LabVIEW, OpenCV, Flask, Shiny, Android |

**ACADEMIC PROJECTS**

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| **Map Reduce on DBLP data** (Scala, Hadoop, sbt)  Hadoop MapReduce computational model to perform analyses on DBLP publication data. | <https://git.io/JtNzW> |
| **Cloud Sim Plus Cloud Simulators** (Scala, sbt)  Simulating executions of applications in cloud data centers with different deployment models. | <https://git.io/JtS4B> |
| **Typesafe Github GraphQL Frontend** (Scala, GraphQL, sbt)  A type-safe read-only frontend to build GitHub's GraphQL queries. | <https://git.io/JJhpZ> |
| **Web Search Engine on UIC Domain** (Python, nltk, beautifulsoup4, Jupyter)  Web search engine to retrieve most relevant webpages for a user search query, from webpages crawled on the UIC domain | <https://git.io/Jf2bm> |
| **Design Pattern Generator IntelliJ plugin** (Java, JavaPoet, Gradle, IntelliJ Platform SDK)  An IntelliJ Plugin for a Design Pattern Code Generator | <https://git.io/JfO6O> |
| **Vector Space Retrieval Model on Cranfield corpus** (Python, nltk, Jupyter)  Implementing a Vector Space Retrieval Model using TF-IDF and cosine similarity | <https://git.io/JfO6R> |
| **Spam E-mail Classifier** (Python, sklearn, matplotlib, Jupyter)  Machine Learning Model to classify e-mails as spam or non-spam | <https://git.io/JfO6u> |
| **Visualizing Radiation Therapy Plan Data** (Javascript, HTML, Three.js, D3.js)  Identifying Similarities and Dissimilarities between UIC/MDACC RT Plan Data | <https://git.io/JfO6a> |
| **US Election Data Exploration and Modelling** (Python, sklearn, matplotlib, Jupyter)  Data Modelling on 2016 US Election Data and US Demographic Data. Creating regression, classification, and clustering models. | <https://git.io/JfO6z> |
| **Visualizing fluid-particle flow** (Javascript, HTML, Three.js, D3.js)  Visualizing a computational fluid flow dataset from the San Diego Supercomputing Center | <https://git.io/JfO62> |

**INTERNSHIP EXPERIENCE**

**Summer Project Trainee, Bhabha Atomic Research Centre, India May 2018 – Jul 2018**Radiation and Photochemistry Division

* Developed a Data Acquisition system using LabVIEW for a Low-Temperature Measurement setup
* Converted existing LabWindows code for nano voltmeter, milliammeter and current source into LabVIEW code   
  to make operations faster and help domain scientists record more precise observations

**Junior Data Analyst Intern, Nuclei Technologies, India Jun 2016 – Jul 2016**

* Received hands-on training on R and studied various data collection and data preparation methods
* Researched how to develop a stock market prediction model on R

**RESEARCH EXPERIENCE**

* **Catchment Control and Water Supply Management** under Prof. Richard Joseph **Jul 2018 – Apr 2019**
  + Developed an Azure ML model to predict if a region is a drought-prone area using its climatic parameters
  + Performed a comparative study of classification algorithms to determine the most optimal for our use case
  + Presented IEEE paper "Water Catchment Control and Management" at [ICICT 2018](https://drive.google.com/file/d/1DmvfcpfR3A3kKmmuqQ5aVTwOjuAyanbt/view?usp=sharing) (not published yet)
* **Electricity Consumption and Home Automation** under Prof. Dr. Mrs. Gresha Bhatia **Aug 2017 – Jan 2019**
  + Designed a web application to help users monitor their domestic electricity consumption to check against faulty power bills and power thefts in India
  + Published Springer paper "Interactive Electricity Consumption System" at [SSIC 2019](https://link.springer.com/chapter/10.1007/978-981-13-8406-6_35)

**GRANTS RECEIVED**

* *AI for Earth Azure Compute Grant* worth $15,000 awarded by Microsoft & National Geographic for the project "Water Supply Management and Catchment Control in Drought Prone Regions of Rural India"
* *UGC Minor Research Grant* awarded by the University of Mumbai for the project "Electricity Consumption and Home Automation" under domains of Machine Learning and Internet of Things

**Catchment Control and Water Supply Management Jul 2018 – Apr 2019**  
Final Year Project, VESIT

* Implemented a system to predict if a region is a drought-prone area using its climatic parameters viz. rainfall, groundwater level, temperature, humidity, and soil type and suggest suitable catchment areas for it
* Used Azure ML Studio to train the machine learning model, deployed it using an API key and developed a Folium based Python web app to display results
* Performed a comparative study of ML algorithms to determine the most optimal for this use case.
* Received $15,000 funding from Microsoft & National Geographic under AI for Earth Grants scheme
* Presented IEEE paper "Water Catchment Control and Management" at ICICT 2018

**Electricity Consumption and Home Automation Aug 2017 – Mar 2018**

Third Year Project, VESIT

* Implemented a web application to help users monitor their domestic electricity consumption to check against faulty power bills and power thefts in India
* Designed a dashboard UI using HTML, CSS, and JavaScript for users to visualize the power consumption of their appliances and proposed a new format for a power bill
* Received Minor Research Grant under domains of Machine Learning and Internet of Things from the University of Mumbai
* Presented Springer paper "Interactive Electricity Consumption System" at SSIC 2019 and IEEE paper "Interactive Electricity Consumption Analysis System" at ICICT 2018

**INTERNSHIP EXPERIENCE**

**Summer Project Trainee, Bhabha Atomic Research Centre, India May 2018 – Jul 2018**Radiation and Photochemistry Division

* Developed a Data Acquisition system using LabVIEW for a Low-Temperature Measurement setup
* Converted existing LabWindows code for nano voltmeter, milliammeter and current source into LabVIEW code   
  to make operations faster and help scientists record more precise observations
* Designed a common control dashboard for the instruments using LabVIEW

**Team Member & Leader, AIESEC Navi Mumbai, India Jul 2016 – Aug 2017**

Operations Incoming Global Volunteers

* Conducted Skype interviews to select potential international volunteers for a Mumbai based Women Empowerment NGO
* Kept track of International Relations with AIESEC local chapters of other nations

**Junior Data Analyst Intern, Nuclei Technologies, India Jun 2016 – Jul 2016**

* Received hands-on training on R and studied various data collection and data preparation methods
* Researched how to develop a stock market prediction model on R