Aditya Kumar Roy

Data Science and Big Data Engineering Professional

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linkedin.com/in/adityakumarroy in

github.com/Aditya-Codes

Full-stack Data Science and Data Engineering result driven professional with expertise in architecting and commercialization of complex big data, analytics, and machine learning solutions over cloud and on-premises. A rich industry and business experience spanning four consumer industries and three continents. Supported in the implementation of advanced feature development for Anaconda, Griffin-Spark Integration, and BigData Notification plugin. An active Kaggler and top-ranked competitive programmer.

WORK EXPERIENCE - FULL TIME

Data Scientist
Electrolux AB

02/2018 – Present   *Stockholm, Sweden*
Industry: Consumer Electronics and Retail

Achievements/Tasks

- Engaged in architecting and commercializing batch, streaming solutions in Data Sciences (Machine Learning, Neural Networks, and Analytics), Data Engineering (Big Data stack, Cloud Computing, and DevOps) and business requirement modeling, consultation across business units.
- Ambassador of the Global Data Science team to internal functional units, facilitator of multiple stakeholder meetings every week in order to articulate solutions to complex use cases in Big Data, Data Sciences, & Analytics.
- Champion in modeling use cases in predictive analytics and end to end Hadoop and Spark stack recommendations.
- A major contributor to internal products with established ownership in full stack Scala and Java.
- Majorly used tools and technologies: Scala, Spark (ETL, Machine & Deep Learning, Streaming, GraphX), HBase, Hive, Pig, MapReduce, Yarn, Neo4J, Tableau, Qlik, Akka, Akka HTTP, Databricks, and Azure DevOps stack.
- Frequently appreciated and recommended by business and functional unit stakeholders. Invited to all in-house meetings and summit.

Machine Learning Engineer
The Economist

07/2017 – 01/2018   *New York, USA and Gurgaon, India*
Industry: Media and Entertainment

Achievements/Tasks

- Independently commercialized complex Artificial Intelligence bots using Machine and Deep Learning over Cloud and DevOps for several use cases across geographies.
- Lead pitch efforts with businesses in London, North and South American regions for Big Data and Analytics. Consulted as an expert for Big Data backed complex Analytics solutions over AWS cloud to various business units.
- Significant contributions in in-house AI (NLP and Deep Neural Network) product development and consulting.
- Majorly used tools and technologies: Python, Scala, Spark (ML and Deep Learning, Streaming, SQL), AWS (complete stack of AI, Analytics, Storage, and DevOps), and Open source Big Data stack.
- Awarded with one salary revision and extended contract.

TECHNICAL SKILLS

Big Data and Analytics tools, technologies & languages
R, SAS, VBA, Apache Spark Stack, Apache Hadoop Stack, MATLAB, SPSS, and Data Engineering stack (AWS, Google Cloud, Azure)

Machine Learning & Deep Learning
Tensorflow, Caffe, Keras, Microsoft Cognitive Toolkit, PyTorch, Deeplearning4j, MXNet, CNTK, Theano, JCuda, and BigDL

Visualization
Tableau, Qlikview, Qliksense, D3.js, Plotly, Giraph, BigML, and PowerBI

Software programming languages
Scala, Java, Python, C, C++, C#, Haskell, Clojure, Perl, and Go

Databases
Oracle SQL, PL/SQL, IBM DB2, MySQL, SQLite, MongoDb, PostgreSQL, Hive, HBASE, MongoDB, Cassandra, and Neo4J

Web & Mobile technologies & languages
J2EE, Java EE, JavaScript, jQuery, AJAX, AngularJS, NodeJS, Android, PHP, PhoneGap, iOS, and Cordova

Cloud Platforms
AWS, IBM Cloud, Google Cloud, Microsoft Azure, and Databricks

INTERNSHIPS

Full Stack Web Developer, IBM Labs Pvt. Ltd. (06/2015 – 08/2015)
- Java, J2EE, AJAX, jQuery, JSP, IBM DB2, AngularJS, NodeJS, and IBM Bluemix

Jr App Developer, TMP Education Pvt. Ltd (11/2014 – 02/2015)
- LAMP, CodeIgniter, AJAX, Javascript, AngularJS, NodeJS, Google Analytics & AdWords, Facebook Ad Manager, Kotlin, Swift, and Java

SEO & Web Developer, Inovas Tech (08/2014 – 10/2014)
- A/B Testing, SEO, SEM, Analytics [Web/Mobile], Ad Platform Management [Facebook Ad Manager, Google Analytics & Google Adwords]

WORK EXPERIENCE - FULL TIME

Big Data Engineer
Exadatum Software Services Pvt. Ltd.

06/2016 – 06/2017 *Pune, India*

Specialized Engineering Consulting firm working on highly sophisticated and complex Big Data, Cloud Computing, and DevOps solutions. Industry: Retail

Achievements/Tasks
- Engaged in architecture and commercializing of complex data engineering streaming and batch solutions over the cloud.
- Lead a team of data engineers in commercializing complex streaming and real-time migration solutions.
- Facilitated stakeholders management, business pitch, and project management.
- Star contributor to company's open source tools and plugins for self-service analytics and visualization.
- Majorly used tools and technologies: End-to-end Data Engineering, DevOps stack (Open Source, Google Cloud & AWS), IBM Watson APIs, TensorFlow, Caffe, and full-stack Scala developer.
- Awarded two salary revision and one promotion in less than 9 months.

FULL STACK PROFESSIONAL SKILLS

Data Engineering Data Sciences Machine & Deep Learning

Cloud Computing & DevOps Statistical Modelling NoSQL

Security & Networking Dashboarding & Visualisation

Graph Databases High Performance Computing

Product Management Recruitment & Retention

ACADEMIC EDUCATION

Electronics and Communication Engineering
Heritage Institute of Technology, Kolkata

07/2012 – 06/2016 *Kolkata, India, 8.7/10.0*

Undergraduate level courses in
- Computer Engineering
- Electrical, Electronics and Communication Engineering
- Advanced Mathematics and Physics
- General Business Management
- Technical Project Management

AISSCE, CBSE
Bharatiya Vidya Bhavan, Kolkata

2010 – 2012 *Kolkata, India, GPA - 91%*

ICSE, CISCE
St. Stephens School, Dum Dum

2010 *Kolkata, India, GPA - 93%*

INTERNSHIPS

Web Developer, Ardent Computech Pvt. Ltd. (04/2014 – 07/2014)
- LAMP and MEAN Stack, Elastic Stack (Kibana, Elastic Search, Beat, Logstash)

Data Analyst Intern, AIESEC in Mainland China (06/2013 – 08/2013)
- Modeling and Implementation of analytics use cases for functional units - Business Development, Account and Logistics. Consulted and presented high-level design diagrams for end to end analytics on IBM Cloud.
- Richly contributed to solutions development using SAS, SPSS, and IBM Cloud (Analytics).

VOLUNTEER EXPERIENCE

Team Member and Team Leader
AIESEC International

08/2013 – 11/2014
Global youth leadership organization

Tasks/Achievements
- Business Development, Expansions, and Stakeholder Management.
- Responsible for building 6 organizational departments in 4 Indian cities.

Campus & Zonal Head
MyWbut

02/2013 – 12/2014
https://mywbut.com

Tasks/Achievements
- Business Development & Expansions.
- Liaison between student bodies and corporates.
- Managed a team size of over 50 members in 6 major cities of West Bengal.
- Prototyped and Implemented job roles and descriptions for the organization.

Zonal Student Ambassador
WebTek Labs Pvt Ltd.

06/2015 – 05/2016

Tasks/Achievements
- Business Development & Expansions
- Liaison between student bodies and corporates
- Managed a team size of over 15 members
- Increased revenue by over 150% from the previous summers

RESEARCH PUBLICATIONS

Undergraduate Research

Constructing Byzantine Fault Tolerance and Von Neumann Machines with Quidam

Author(s)
Aditya Kumar Roy

Nov 2017
IJSER - goo.gl/fw26mc

Proposed a novel methodology for the synthesis of lookaside buffer (Quidam) to solve the producer-consumer problem with online algorithms along with improving the deployment of multiprocessors. Trained AI models to validate that gigabit switches can be made decentralized, probabilistic, and ubiquitous.

Undergraduate Research

A Methodology for the improvement of Reinforcement Learning

Author(s)
Aditya Kumar Roy

Nov 2017
IJSER - goo.gl/5RKSJg

Presented a novel methodology for simulating 802.11 mesh networks alongside confirming on the efficiency of the lossless data compression algorithm for the simulation of write-back caches. Additionally demonstrated the incompatibility between active networks and multicast frameworks.

Undergraduate Research

Jab: A methodology for the understanding of Hierarchical Databases

Author(s)
Aditya Kumar Roy

Nov 2017
IJSER - goo.gl/z9ceVB

Proposed new atomic communication (Jab) building, validating on the incompatibility of context-free grammar and superblocks. Proposed a novel approach to confirm that the infamous constant-time algorithm for the emulation of consistent hashing follows a Zipf distribution.

Undergraduate Capstone project

Improved Particle Swarm Optimization

Author(s)
Aditya Kumar Roy

May 2016
Heritage Institute of Technology, Kolkata and Bharat Sanchar Nigam Limited

Suggested novel improvements to the existing swarm optimization algorithms for linear and non-linear electronic filter design. Demonstrated the improvement metrics against the baseline Ant Colony, Bat Colony, and Bees optimization algorithms. Lead a team of four in the capstone thesis defense and the grand viva. Acknowledged and appreciated for both the performance by the Head of the Department and Emeritus Professors in the special mention of top 1% at the convocations.

Under review - Wiley

An Overview on the Evolution and Adoption of Deep Learning Applications being used in the Industry

Author(s)
Dr. Sourav Dutta, Aditya Kumar Roy

Date of Publication
Computational Intelligence, Wiley

A comprehensive solution based compilation of the open questions in architecture and implementation of the AI design patterns spanning industries including Manufacturing, Retail, Agriculture, Cyber Security, Automobiles, and Healthcare.

VOLUNTEER EXPERIENCE

Vice President
Entrepreneurship Development Cell

11/2015 – 05/2016
Heritage Institute of Technology, Kolkata

Tasks/Achievements
- Founding member of EDC in the campus
- Responsible for Marketing & Sales
- Managed a executive body of 5 members
- Implemented job roles and descriptions for the student club
- Successfully organized two large scale events in the campus

Marketing Secretary
Annual Tech and Cultural Fests

06/2014 – 05/2016
Heritage Institute of Technology, Kolkata

Tasks/Achievements
- Business Development, Marketing, and Sales
- Responsible for managing more than 80% of the total budget for those years
- Managed a distributed executive team of 23 members across 6 cities in the state

CEO
iSnapStories

08/2015 – 04/2016
Advertisement analytics and revenue optimization platform for content distributors

Tasks/Achievements
- Expanded the presence to 12 state wide colleges in Eastern India
- Managed a diverse team of editors, marketers, and sales professionals
- Generated revenue of over 5 times the cost of total investment over the period of six months

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NOTABLE PROFESSIONAL PROJECTS

Real-Time Quality and Fraud detection for robotics based consumer appliances (02/2018 – Present)
Electrolux AB
- Architected and implemented advanced dashboard and analytics solutions on Microsoft Azure and on-premises cluster for batch and real-time.
- Pyspark implementation of automated translations using advanced NLP algorithms based on supervised, semi-supervised, and topic modeling algorithms.

AI Chatbots for Alexa, Google Home, and Slack devices (07/2017 – 12/2017)
The Economist
- Cloud-based consumer self-service bots using complex Deep Learning algorithms including neural conversational models, generative hierarchical models, seq2seq, persona-based models to serve audio and image contents from Elasticsearch and HBase over Alexa, Slack, and Google Home.
- Implemented frameworks and solutions for dashboard monitoring and logging solution over Qlik and Kibana.

Real Time & Batch Omni-channel Analytics Dashboards (07/2016 – 01/2017)
Kohl's Department Store
- End-to-End cloud-based data engineering pipelines using open source Hadoop, Spark and Elastic stack based complex ingestion pipelines for batch and real-time using Kafka, Gobblin, and Informatica.
- Implemented visualization frameworks and plugins for self-service with PowerBI, Clicksense, Tableau, and Kibana.

Real Time Recommendation System (07/2016 – 11/2016)
Kohl's Department Store (Exadatum)
- Designing and Implementation of cloud and on-premises self-service AI solutions on Google Cloud and on-premises.
- Implemented NoSQL functionalities (HBase and GraphX) and advanced trainable models using matrix decomposition, collaborative filtering, and clustering.

OPEN SOURCE CONTRIBUTIONS

Bug fixes and added functionalities for Py Anaconda
MIT License
github.com/Aditya-Codes/OptimizedAnacondaDistribution
- *Achievements/Tasks*
- Fixed auto deployment (over Heroku) for windows client.
- Added components for SSIS triggering.
- Dependency management simplified for ETL orchestration.
- Added support for Pythonw on macOS.
- Added support for Beeline.
- Added support for Scheduler orchestration over Oozie and Airflow.
- Added support for Auto-jar build for Databricks cluster.

Enterprise Data Science notification plugin
Apache 2.0
github.com/Aditya-Codes/BigDataNotificationPlugin
- *Achievements/Tasks*
- Template based one-click deployment through Jenkins.
- Encryption support for environment variables using a single key.
- Supports both Maven and ANT based projects.

ACHIEVEMENTS

Ranked first among 12,000+ participants in '7 Days of Javascript' (2016)
HackerRank - www.hackerrank.com

Ranked first among 27,000+ participants in '30 Days of Code' (2016)
HackerRank - www.hackerrank.com

Best summer project from over 300 team submissions (2015)
IBM CE Education

Microsoft Student Partner (2014-15).
Mircosoft

Nominated by Microsoft Corporation, India for LeadLab Fellowship program. (2015)

First ranked in coding, mathematics competitive events (2012 – 2015)
Heritage Institute of Technology, Kolkata

CERTIFICATIONS

Certified Data Scientist, Data Analyst, Python Programmer (2018 – Present)
Datacamp - 22 course full stack certification

Microsoft Azure Solutions Architect, Microsoft Azure Administrator, AWS DevOps Engineer (2018 – Present)
Pluralsight - 20 course certification

Introduction to Software Product Management
University of Alberta

Structuring Machine Learning Projects
deeplearning.ai

Certified Scrum Master (2018 – Present)
Scrum Alliance

Certified Business Analyst (2016 – Present)
Edupristine

Certificates Archive - goo.gl/WrKQCf

PROFESSIONAL MEMBERSHIPS

Association for Computing Machinery (08/2016 – Present)
Professional Membership & Online Cacm. Participated in : Technical Expo (2017) and Workshop on Paper Writing (2016)

Association for Data Science (08/2017 – Present)
Professional Member & Independent Contributor - Facilitator and Participant in Monthly round table talk on Artificial Intelligence

OPEN SOURCE CONTRIBUTIONS

○ **Griffin Spark Integration Plugin**
Apache 2.0
github.com/Aditya-Codes/GriffinSparkIntegration

  Achievements/Tasks
  - Supports Spark, Yarn and JVM logs, metrics aggregation in Griffin.
  - Framework for error logs reproducibility and maintenance.
  - Feature to support backward compatibility with Spark 1.6.
  - Framework for Self-service analytics template based deployment.

○ **AI modeling on public datasets**
The Unlicense, MIT License

  Achievements/Tasks
  - Machine Learning - github.com/Aditya-Codes/SparkonDatabricks
  - Text Mining & Analytics - github.com/Aditya-Codes/MachineLearning
  - Spark ML on Databricks Cloud - github.com/Aditya-Codes/TextMiningAnalytics

PROFESSIONAL MEMBERSHIPS

MLSociety (12/2017 – Present)
Professional Member - Working with the local members in India to create the MLSociety's chapter in Bengaluru, India

Data Science contributor - Safecity (07/2017 – Present)
Contributor and Consultant for AI and Analytics projects.

Y4D Foundation (07/2016 – 12/2016)
Campaign Analytics Manager