Jinen Setpal

Data Scientist and Penetration Tester

304, Pushpagriha, J/o 16th Road & PD Hinduja Marg, Bandra (West), Mumbai - 400050, Maharashtra, India
Mumbai | +91 88985 53578 | Jinen Setpal | @ jinens8@gmail.com | jinensetpal.github.io

Education

2021 – 2025 **Purdue University**
Student · Indiana
Bachelor's in Data Science

2019 – 2021 **RN Podar School**
Student · Mumbai
Math, Physics, Chemistry with Elective Computer Science *(CBSE)*, Class 12.
Expected GPA - (96.20%)

2017 – 2019 **Jasudben ML School**
Student · Mumbai
Science Stream *(ICSE)*, Class 10.
GPA - (93.86%)

Publications

2019 – 2021 **CutLang V2: Advances in a runtime-interpreted analysis description language for HEP data**
CERN · Frontiers in Big Data (Endorsed) · Prof. Gökhan Ünel, et al. ·
We will present the latest developments in CutLang, the runtime interpreter of a recently-developed analysis description language (ADL) for collider data analysis. ADL is a domain-specific, declarative language that describes the contents of an analysis in a standard and unambiguous way, independent of any computing framework. In ADL, analyses are written in human-readable plain text files, separating object, variable and event selection definitions in blocks, with a syntax that includes mathematical and logical operations, comparison and optimisation operators, reducers, four-vector algebra and commonly used functions. Adopting ADLs would bring numerous benefits to the LHC experimental and phenomenological communities, ranging from analysis preservation beyond the lifetimes of experiments or analysis software to facilitating the abstraction, design, visualization, validation, combination, reproduction, interpretation and overall communication of the analysis contents. Since their initial release, ADL and CutLang have been used for implementing and running numerous LHC analyses. In this process, the original syntax from CutLang v1 has been modified for better ADL compatibility, and the interpreter has been adapted to work with that syntax, resulting in the current release v2. Furthermore, CutLang has been enhanced to handle object combinatorics, to include tables and weights, to save events at any analysis stage, to benefit from multi-core/multi-CPU hardware among other improvements. In this contribution, these and other enhancements are discussed in details. In addition, real life examples from LHC analyses are presented.

2020 **ArchiMeDe @ DANKMEMES: A New Model Architecture for Meme Detection**
Seventh Evaluation Campaign of Natural Language Processing and Speech Tools (EVALITA 2020) · Jinen Setpal, Gabriele Sarti ·
We introduce ArchiMeDe, a multimodal neural network-based architecture used to solve the DANKMEMES meme detections subtask at the 2020 EVALITA campaign. The system incorporates information from visual and textual sources through a multimodal neural ensemble to predict if input images and their respective metadata are memes or not. Each pre-trained neural network in the ensemble is first fine-tuned individually on the training dataset to perform domain adaptation. Learned text and visual representations are then concatenated to obtain a single multimodal embedding, and the final prediction is performed through majority voting by all networks in the ensemble.

Work Experience

2020 – Present

Teachiq AB / exam.net
System Developer · Part-Time · Remote
Developing Linux desktop applications for exam delivery service exam.net incorporating custom security implementations.

Project Experience

2020 – Present

Mobile Based Realtime Panoptic Segmentation
Independent ·
Embedded realtime panoptic segmentation to mobile devices. The final goal is to use the derived data to build a model capable of identifying a safe path that visually impaired individuals can use to navigate independently. A three-dimensional soundscape is a planned implementation to direct the user. Development for this project can be followed at this Github repository.

2020

Exploiting Broken API Vulnerabilities Through Request Scripting
Independent ·
The robust web penetration testing framework Burp Suite has been employed in order to identify and report API vulnerabilities. Requests made to payment APIs for e-wallets were through careful analysis found to be modifiable. As a result the server handling e-wallet payments requests a wallet reduction equivalent to the arbitrary price set by the cracker, facilitating free purchases and jeopardizing company profits. A proof-of-concept of the above stated can be found [here].

2020

Software Engineering Intern
NoFiltr Social LLP ·
Developed an analytics platform for influencers on Twitter, Instagram and YouTube. The platform provides a service for influencers to collaborate among one another and optimize advertiser revenue. Developed using Java.

2018 – 2020

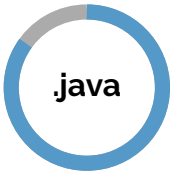
Developing Bus Tracking Software for Student Security
JML School ·
Developed a fully functional application for tracking school buses for the benefit of the school's students. The app is used in order to ensure the location of buses. It allows estimation of location allowing students to time their commute to and from designated pick-up spots. The primary purpose of the project is to ensure student safety and security. The project is set to be deployed post the Novel Coronavirus (COVID-19) pandemic when buses resume function.

2019

Automation Engineering to Beat Web-based Typing Games
RN Podar School · Manish Agarwal
Custom scripts were developed using in conjunction with Firefox's web-driver in order to develop a bot that automatically logs in the website, initiates and competes in a game with no user input. The bot achieved a words-per-minute average of 310 over 87 runs. The software also incorporates OCR through PyTesseract in order to bypass the server's protection against bot attempts.

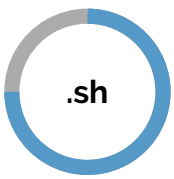
Programming

Machine Learning | Automation



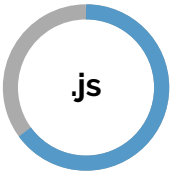
App Development

Lexical Analysis



Scripting

Reverse Engineering



Web Development | Email Delivery

Cybersecurity

2020 **EC-Council Certified Security Analyst**
ECSA · Macksofy Technologies
The ECSA course is the second in a set of a three stage course for professional cybersecurity knowledge [CEH->ECSA->OSCP]. The course covers the OWASP Top 10 vulnerabilities that exist in the industry today. It covers topics crucial to participate in bug bounties, and CTF [Capture the Flag] Competitions

2019 **Certified Ethical Hacker**
CEH · Macksofy Technologies
The Certified Ethical Hacker is a beginner level course that describes the basics of a networking, introduces the individual to the fundamentals of cybersecurity. The user is introduced to Linux, and the corresponding framework providing tools for penetration testing.

Leadership

2020 **Lead Developer**
AatmaNirbhar (Independent) App Innovation Challenge ·
Headed a team of developers on an open sourced social media platform focused on privacy and security for the Indian Government's App Innovation Challenge. The app was built for Android and iOS, and presented to the judges in July 2020. More details on the platform are present here.

2019 **Project Head**
Internship ·
Project Head for an internship at NoFiltr - influencer marketing company. The team developed key performance indicators [KPI] for individual marketing teams. We used algorithmic based methodologies in order to ensure quantification of employee performance.

2019 **Captain**
Asian Regional Space Settlement Design Competition ·
Grade 11 Students were tasked with developing a proposal for a space settlement based on competition specifications. I captained the team and were honorary guests to witness stages held at Delhi, India.

2019 **Head of Tech**
Dhrishtikon ·
Headed all technological operations for an student-led play for teachers and parents. Using Raspberry Pi's, automated command execution to alter stage lights and backdrops across performances.

Outreach

2021 – Present **collinear.tech**
Blogger · Independent
Built and launched a STEM blog, collinear.tech, where I summarize research papers, I come across in the domain of CS that intrigue me deeply.

20 Jun 2021 **TEDxYouth @ RNPodar**
Post Production · TED
Through this interdisciplinary TEDxYouth (virtual) conference, themed 'Blindspots' we are planning to gather a range of perspectives on the notion of blindspots and one's own relationship to it — professional, academic or personal.

6 Feb 2021 **Impact of COVID 19 on Quality Education**
Panelist · RewirED Talks
Provided insight on my experience, challenges and solutions curriculum, assessment, teaching and learning, technology, innovation, and overall school improvement, impact on emotional well being & impact on inclusive education.

Skills

Frameworks	Tensorflow, ROOT, SPYDER, Node.js, Vue.js, Electron
Document Formatting	LaTeX
Development Utilities	Pycharm, Android Studio, Git, Jupyter Notebook, Atom, MariaDB
Software Utilization	AR Object Modelling, Audio and Video Editing, Special Fx [Adobe Suite]

Achievements

2019 **Excellence in Computer Science**
AWARDEE · Jasudben ML School
Awarded certificate for distinguished performance in computer science with school rank #1 and personal initiative for tutoring weaker students.

2018 **Australian National Chemistry Quiz**
HIGH DISTINCTION · RACI Chem Ed Central
Awarded a certificate of high distinction for exceptional performance in the all-India held quiz for Chemistry knowledge and application.

2019 **Not A Hackathon**
WINNER · RN Podar School
Winner of the Not A Hackathon Coding competition - a utility-centric application was fully developed from start to finish in a competition lasting a time persiod of two days.

2019 **Shri J.D. Kathuria Prize for Excellence in Mathematics**
AWARDEE · Jasudben ML School
Awarded prize for distinguished performance in mathematics with school rank #1.

2019 **ASSET Talent Search**
DISTINGUISHED PERFORMANCE · Educational Initiatives, India
Certifications awarded for >95% percentile performance in ASSET quiz subjects on Math, Science and English.

2018 **Codewars - Founders Week**
WINNER · Jasudben ML School
Winner of Codewars - a programming competition on the Founders' Week 2019. Automation software was developed using Java.

References

Shyam Wuppuluri
Research Associate
RN Podar School, Mumbai
shyam@rnpodarschool.com

Prof. Gökhan Ünel
Particle Physicist
CERN, Geneva
gokhan.unel@cern.ch

Gabriele Sarti
NLP Research Intern & MSc Candidate
University of Trieste & SISSA, Italy
gsarti@sissa.it

Aswathi Padmakumar
School Counselor
RN Podar School, Mumbai
aswathi@rnpodarschool.com

Manish Agarwal
Computer Science Teacher
RN Podar School, Mumbai
manish@rnpodarschool.com