

Aryan Seth

 Aryan-Seth |  arianseth |  setharyan07@gmail.com

EDUCATION

Birla Institute of Technology and Science, Pilani	'Oct 21 - Present
Bachelor's of Engineering in Computer Science	GPA 8.73/10
The Bishop's Co-ed School Kalyaninagar, Pune	'Jul 08 - 'Jul 21
Class 12, ISC	Grade: 97.5%
Class 10, ICSE	Grade: 95.8%

RESEARCH EXPERIENCE

Researcher - Vollmer Group, DFKI	'Aug 24 - Present
<i>In-person, DFKI HQ, Kaiserslautern, Germany</i>	
<ul style="list-style-type: none">Working on graphical criterion for regret-free auxiliary experiments for Structural Causal BanditsExtended Collaborative Causal Bandits to non-Markovian graphs and integrating node discoveryCreated AuxPOMIS - under review at CLeaR, focused on regret-free auxiliary experiments for SCBs	
Research Intern - Dependable Computation Lab, Iowa State University	'Jul 23 - 'Oct 23
<i>Remote</i>	
<ul style="list-style-type: none">Wrote the Neural Architecture Search code base with a search space of 500+ blocks and fusion methodsUtilized information flow to evaluate hybrid models, improving accuracy by 4% in training-free NASBuilt comprehensive data pipelines and created extendable plugins for 25+ metrics and 30+ datasets	
Research Intern - Center for Machine Intelligence, IIT Bombay	'Jun 22 - 'Sep 22
<i>In person, Mumbai, India</i>	
<ul style="list-style-type: none">Worked under Prof. Tewari on cost minimization using machine learning for CNC machinesCreated a novel few-shot framework with a 15% gain in accuracy using 80% less dataReduced setup time of AI systems on new CNC machines by 60% using Few-Shot Transfer Learning	

WORK EXPERIENCE

Summer Associate - Boston Consulting Group	'May 24 - 'Jul 24
<i>In-person, Mumbai, India</i>	
<ul style="list-style-type: none">Consulted one of India's largest infrastructure players on airport bid strategy worth 500 Million USDDelivered a financial model on Commercial Property Development driving 50% of projected revenueLed the risk team to evaluate 10+ potential partners and negotiated contracts saving 30% in costs	
Machine Learning Intern - VoiceQube	'May 23 - 'Jul 23
<i>Remote</i>	
<ul style="list-style-type: none">Built the code base and CI/CD pipelines for user-defined MFT trading using the Dhan API in PythonDeveloped and created an automated data pre-processing pipeline using YFin API and MySQLRefactored code to make alphas functional improving readability and reducing future development time	
Software Development Intern - SNR Investment Advisors	'Dec 22 - 'Jan 23
<i>In person, Gurugram, India</i>	
<ul style="list-style-type: none">Rewrote the firm's MFT library backend in C++ and reduced execution latency by over 25%Refactored source code using SOLID principles and built APIs, automating 10% of development tasksDeployed 5+ options trading strategies executed over multiple time horizons	

PROJECTS

SynthShield: Distribution Centric Learning to mitigate Adversarial Attacks

- Increased privacy in Neural Networks by **30%** using pruning, generative data, and information theory
- Using memorability and feature importance, constructed sampling algorithms for pre and post training
- Improved accuracy (**25% over SoTA**) with equivalent privacy; paper under review at ICML

R-Tree Implementation and Visualisation - C++

- Optimized code for distance calculation and built a visualizer using t-SNE for n-dimensional data
- Built a test bench to analyze Pareto-frontiers for trade-offs between time and optimum node splits
- Improved on the original paper by implementing spheres instead of n-cuboids for splitting operations

Compiler Construction - C

- Created a compiler supporting mathematical operations; loops; and parametric function calls
- Implemented the compiler from scratch in C including lexical analysis, syntax parsing, AST creation, symbol table, type checking, and semantic analysis

ACHIEVEMENTS AND AWARDS

Graduate Record Examination - 170/170 in Quant, 165/170 in Verbal, 4.5 in AWA

Eightfold Hackathon - Rank **3/10,000** in India for an AI HR screener and interactive dashboard

LxMLS - Only undergraduate selected to attend a Deepmind-sponsored summer school in Lisbon

Avery Dennison InvEnt - 1/10 out of 2000 awarded **USD 1300** for a product focused on CSR

AAAI Student Grant - Awarded 2000 USD to travel to Canada and on fairness in AI

BCG Ideathon - 9/500+ teams winning a startup pitch, offered an internship and won 1000 USD

Kaggle Expert - Top 1% of Kagglers, multiple medals for competitions, datasets, and notebooks

PUBLICATIONS

Aryan Seth*, SSA Rizvi* and Pratik Narang (2024). “FAIR-FER: A Latent Alignment Approach for Mitigating Bias in FER”. In: *38th AAAI Conference on Artificial Intelligence* [Link to paper](#).

SSA Rizvi*, Aryan Seth* and Pratik Narang (2024). “Balancing the Scales: Enhancing Fairness in FER with Latent Alignment”. In: *International Conference on Pattern Recognition (Core B)* [TO CHANGE](#).

SSA Rizvi* Aryan Seth*, JS Challa and Pratik Narang (2024). “InFER++: Real-World Indian Facial Expression Dataset”. In: *IEEE Open Journal of the Computer Society (IF: 5.7)* [Link to paper](#).

POSITIONS OF RESPONSIBILITY

Vice Chair, IEEE BITS Pilani - Lead **3+** research groups, resulting in **4** publications

Senior Quant, Finance Club - Manage a fund of INR 14 Lakh; raised INR 10 Lakh in the past year

Research Lead, KXR Lab - Lead a **30+** member team working on research in Augmented Reality

Academic Mentor, iTeach - Taught **30+** Class 11 students from underprivileged backgrounds

TEACHING EXPERIENCE AND TALKS

Invited Talk - Unsupervised Learning and Fairness

'Oct 23

Mody University, India - as part of IEEE BITS Pilani

- Gave a one hour talk introducing unsupervised learning, from K-Nearest Neighbours moving towards bias mitigation and fairness

CS F425 - Deep Learning

'Jan 23 - 'May 23 and 'Jul 23 - 'Dec 23

Head Teaching Assistant

- Created 10+ lab sheets and taught labs to 70+ students on implementing Deep Learning in PyTorch
- Taught **3+** lectures on special topics (only undergrad to do so) and developed the capstone project

CS F221 - Data Structures and Algorithms

'Jan 24 - 'May 24

First Degree Teaching Assistant

- Taught labs for **100+** students on advanced topics - Segment Trees and Fibonacci Heaps
- Designed the lab test evaluation and created course material on algorithms for optimization

Computer Architecture; Formal Languages

'Jan 24 - 'May 24, 'Jul 24 - 'Dec 24

First Degree Teaching Assistant

- Taught labs to 200+ students and created evaluations in **Verilog** and **C**
- Specifically taught concepts focused on multi-cycle architectures, pipelining, and parallel computing