ASAD SHAHAB SHAFQAT

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EDUCATION

New York University, Tandon School of Engineering **Expected May 2028**
Master of Science, Computer Engineering *Brooklyn, NY*

- **Key Courses**: Machine Learning, Game Theory, Big Data, High-Performance Machine Learning
- Awarded the NYU FUEL Fellowship in recognition of academic merit and leadership potential

Ghulam Ishaq Khan Institute of Engineering Sciences & Technology (GIKI) **Aug 2019 - June 2023**
Bachelor of Science, Computer Science *Topi, Pakistan*

- **Key Courses**: Artificial Intelligence, Deep Learning, Information Retrieval, Operating Systems, Parallel Processing, DSA

PROFESSIONAL EXPERIENCE

Systems Limited *(Pakistan's largest global IT Consulting & Enterprise Software Firm)* **July 2023 - Nov 2025**
Junior Consultant - RPA (formerly Associate Consultant - RPA) *Islamabad, Pakistan*

- Owned the end-to-end delivery lifecycle for 15+ enterprise automations for global clients including Hilton and British American Tobacco - covering process assessment, requirements gathering, development, testing, deployment, and hyper-care support
- Engineered Power Automate and Blue Prism workflows integrating REST APIs, SQL, Salesforce, and TopDesk - cutting manual processing time by up to 90% and saving 500+ hours monthly
- Led process discovery and authored PDD/SDD technical documentation, enforcing RPA coding, security, and exception-handling standards to standardize delivery across the automation portfolio
- Created a library of reusable components, debugged and optimized existing bots, and monitored performance in coordination with cross-functional teams, contributing to a 60% increase in overall client team productivity

PTCL Group (PTCL | Ufone) *(Pakistan's leading telecom and broadband provider)* **July 2022 - Sept 2022**
Information Technology Intern *Islamabad, Pakistan*

- Built and deployed a Flutter and Firebase app (Android, iOS, web) connecting customers with qualified technicians over video call and chat, cutting average time to resolve a customer issue by 30%
- Designed the UI/UX flows in Figma and wrote the API integration guides and user manuals for future developers

Lakuemas Indonesia **July 2021 - Sept 2021**
Product Intern *Jakarta, Indonesia*

- Analyzed 7 competitors to shape 3 product strategies, lifting user engagement by 15% in the first quarter after launch
- Specified 4 new features (requirements, user flows, Figma mockups); 2 launched and raised monthly active users by 10%

PROJECTS

Dye Packs for AI - Game-Theoretic Decoys Against Hijacked AI Agents *(Python, SciPy, AgentDojo, Claude/Gemini APIs, Ollama)*

- Built a decoy kit that plants fake files, tools and credentials in AI agents' workspaces to detect prompt-injection hijacking, and a Stackelberg game solver (linear programming) that decides how many decoys to plant and where
- Evaluated in 2,100+ AgentDojo runs with Claude Haiku 5.5, Gemini 3.8 Flash and Qwen3 8B: no false alarms in 643 runs of the 40 standard tasks, and the decoys flagged 35 of 36 runs in which a naive hijacked agent sent data out

Empirical Game Theory & Meta-Game Analysis - Sequence *(Python, NumPy, SciPy, Nashpy)*

- Simulated 3.38M two-player games across 17 experiments to build meta-game payoff matrices, solved for Nash equilibria by linear programming, and showed via Balduzzi decomposition that one skill rating explains 99.4% of results
- Implemented 19 strategy bots (heuristic, card-counting, Monte Carlo lookahead) and double-oracle counter-strategy hunts with Holm corrections and fresh-deal replication; Jack timing proved the biggest lever (+6 pp win rate)

Kestrel - Pure-Python Chess Engine & Series-Adaptive Agent *(Python, Alpha-Beta Search)*

- Engineered a chess engine using only the standard library and python-chess, with a 10x12 rotated-board representation, iterative-deepening PVS alpha-beta search, transposition tables, null-move pruning, and late-move reductions
- Integrated game-theoretic series memory ("strategy stealing") and score-dependent draw contempt, achieving a 16/20 score against Sunfish under 30 + 0.3s blitz controls

Soundstage - Diffusion-Based Audio & Speech Synthesis Platform [Bachelor's FYP] *(Python, PyTorch, Flask, Flutter, Firebase)*

- Architected a full-stack audiobook web app (Flutter, Firebase, Flask on GCP) and researched a 1D U-Net diffusion vocoder, matching ConvTranspose1d kernels to STFT parameters to rebuild high-fidelity audio from mel-spectrograms
- Built an automated NLP script-parsing pipeline (regex, Stanford CoreNLP/NLTK NER, Limbic scene-level sentiment analysis) to attribute speakers and modulate emotional voice inflections for accessible audiobook production

SKILLS

Languages: Python, C++, JavaScript, Java, Dart, SQL, R | **AI/ML:** PyTorch, TensorFlow/Keras, Scikit-learn, NumPy, Pandas, Hugging Face, NLP, Diffusion Models, CNNs, LLMs, RL | **Automation:** Blue Prism, Power Automate, Selenium, Salesforce, REST APIs | **Backend & Cloud:** Flask, FastAPI, Node.js, Firebase, Flutter, Git, Docker, AWS