Tanjal Shukla

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EDUCATION

University of Washington - Seattle, WA Graduation Date: June 2026

BS in Computer Science, Minor in Computational Finance 3.87/4.0 GPA

Coursework: ML/AI, DL, Distributed Systems, Networks, Operating Systems, Databases, Autonomous Robotics

WORK EXPERIENCE

Amazon **Seattle, WA**

Software Development Engineer Intern *June 2025 - September 2025*

- Built and integrated dependency-graph analysis layer for large-scale data processing service used by 6,000+ teams, cutting execution time in Apache Spark testing environments 67% and per-run cost 92% by triggering targeted jobs
- Developed serverless microservices and REST APIs (AWS Lambda, DynamoDB, S3, CloudWatch) to automate targeted workflows, persist anomaly-tracing data, and deliver real-time metrics dashboards with zero loss
- Engineered an extensible backend Java library for annotation-driven graph construction, cycle detection, and concurrent graph traversals, integrated into a TypeScript UI for automatic draft revision analysis

Social Futures Lab, University of Washington **Seattle, WA**

Undergraduate AI Researcher *January 2025 - Present*

- Built Hedwig, governance layer for coding agents (Claude Code plugin) deciding allow/ask on file edits in <20ms via layered cascade; won Industry Spotlight Award at ACM CAIS 2026, presented at AI Engineer World's Fair 2026
- Designed storage layer as single SQLite substrate; append-only log of every agent action and developer decision serving classifier training, context retrieval, observability from one indexed store; hooks run as stateless subprocesses
- Trained an online policy model (logistic regression, isotonic calibration) on decision log, adapting per-repo; regret loop converts reverted edits and CI failures into exactly-once corrective training signal
- Schema-validated LLM output (Pydantic), keeping deterministic security rules authoritative over model behavior

Success Koach **Seattle, WA**

Full-Stack Software Engineer *September 2024 - December 2024*

- Shipped Azure-hosted UC admissions analysis app (Spring Boot, Postgres, React) end-to-end with CI/CD; designed schema over 50K+ records, REST APIs serving 1K+ weekly requests

Parentheses Systems **Seattle, WA**

Machine Learning Intern *June 2024 - September 2024*

- Built queryable knowledge graph in Apache Jena from custom OWL ontologies, ingesting 2,000+ daily datapoints

PROJECTS

Sharded Key-Value Store on Multi-Paxos (Java) *January 2026 - March 2026*

- Implemented Multi-Paxos (leader election, log replication, view changes), built a sharded KV store on top with dynamic reconfiguration, linearizable shard migration, and two-phase commit for cross-shard atomic transactions

Tree-Walking Interpreter (Java) *December 2025 - January 2026*

- Built tree-walking interpreter end-to-end (lexer, parser, AST, scope resolver, evaluator) with classes, inheritance, closures, and lambdas; implemented variable resolution pass for correct lexical scoping

xk Operating System Kernel *January 2025 - March 2025*

- Implemented core syscalls (fork, exec, pipe), copy-on-write fork with lazy page allocation and reference-counted frames, on-demand heap growth, crash-safe file system with atomic metadata transactions and idempotent log replay

SKILLS

Languages: Java, Python, Go, C, TypeScript, SQL

Frameworks & Tools: PyTorch, scikit-learn, NumPy, Claude SDK, AWS (Bedrock, Lambda, DynamoDB, S3, CloudWatch), Azure, Docker, Spring Boot, React, Tailwind, Postgres, Git, REST