Production-Grade Engineering for 100,000 African STEM Students

A partnership to scale an already-built engineering academy: modern tools, verified skills, and real project experience for students and universities across Africa.

400M†
young Africans of working age by 2035

10 · 40
career tracks · courses

946+
hands-on labs, already built

$29
maximum student fee per course

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SUMMARY

At a Glance

Item	Summary
The challenge	Africa will have over 400 million young people of working age by 2035†, yet most computer science and engineering graduates leave university without production-grade engineering skills.
The solution	A complete, already-built training academy: 10 career tracks, 40 courses, 946+ hands-on labs, and over 1,250 study hours, delivered in professional tools (VS Code, IntelliJ IDEA, Android Studio).
The price	Student fees capped at $29 per course and $500 per full track, against $1,500–$3,500 for comparable programs overseas.
The ask	Partner with us to subsidize and scale access to 100,000 students over 48 months, and to modernize practical training inside partner universities.
The accountability	A live donor dashboard, public verification of every credential against real code, and independent audits and tracer studies.

† Program estimate. Methodology and sources are provided on request during due diligence.

THE CHALLENGE

1. The Problem: Hardware Without Modern Tools

More young people are entering the workforce in Africa than anywhere else in the world. Technology offers one of the clearest routes to good employment, and a growing number of students now own laptops while public institutions have built departmental computer labs.

Hardware alone has not closed the skills gap. Many labs and student machines run outdated software stacks, deprecated compilers, and syllabi written ten or fifteen years ago. Students learn legacy syntax rather than current language releases, and they rarely meet the tools employers expect: version control, automated testing, containers, continuous integration, and API design. We estimate that roughly 85% of computer science and engineering students graduate without having written working, production-grade software†. Families make major financial sacrifices for these degrees, and employers then cannot hire graduates without extensive retraining.

Past interventions have not closed the gap. Video libraries and introductory computer-literacy programs have been widely funded, but video lectures do not teach someone to trace a build error or ship an application. Completion rates for these formats often fall below 15%†.

Three Illustrative Accounts

The accounts below are illustrative of what students describe across campuses in Lagos, Ibadan, Nairobi, Accra, and Kinshasa.

The outdated software trap
Chidi brought his own laptop to the campus lab every morning, but his syllabus had his class practicing on a Java release more than a decade old, in an abandoned desktop editor. There were no modules on Git, REST APIs, or automated testing. He scored 78% in coursework. At his first technical interview, at a payments company, he was asked to configure a Spring Boot project on Java 21 and run a database migration. He had never seen these tools, and his application was rejected.

The midnight data bundle
Amina lives outside Kaduna, where the grid fails several days a week and her laptop battery lasts about 45 minutes. She wakes at 1:45 a.m. to buy discounted night data, paid for from her food budget. Video courses buffer and burn through her allowance without delivering the lesson. When the neighborhood generator cuts out, her work is lost before she can save it.

The clerical internship
Tunde spent months looking for a technical placement to satisfy his mandatory six-month industrial training (SIWES). He ended up in a state agency's administrative office, photocopying letters and replacing printer ink. He graduated with strong marks but no project experience, and software employers turned him away.

THE GAP

2. Why Earlier Approaches Have Fallen Short

Approach	Limitation	The Savadub response
Video-based online courses	Watching feels like learning, but students stall when they must write and debug code alone. Dropout is high.	Hands-on labs: learners clone real repositories, write code in professional IDEs, and are assessed by automated test runners.
In-browser sandboxes	They hide real friction: dependencies, project files, team workflows.	All labs run in industry-standard tools, building workplace habits from day one.
Overseas certifications ($1,500+)	Priced beyond reach for most African families.	Fees capped at $29 per course, with grants and CSR funds covering the balance and no student debt.
Basic computer classes	Teach how to use software, not how to build it.	Focus on in-demand building skills: payment systems, compliance, data, mobile, and secure web.

The missing middle
The labor market has two extremes: millions with basic digital skills, and a small pool of senior engineers who are quickly hired by foreign firms. Local banks, hospitals, logistics companies, and government agencies struggle to find junior and mid-level engineers who can build payment integrations, secure databases, and maintain web platforms. Savadub is designed to produce exactly these practitioners.

HOW IT WORKS

3. The Savadub Model

Savadub Institute is an engineering academy and learning platform designed for the infrastructure realities of African students.

1. **Git-native labs.** Every lesson and assessment is a standard code repository. Students clone, code, test, and push using professional practice.
2. **Professional tools.** IntelliJ IDEA for Java, VS Code for web and TypeScript, Android Studio for mobile, Burp Suite for application security.
3. **Real business problems.** Capstones draw on anonymized enterprise scenarios: double-entry ledgers with ACID guarantees, multi-tenant SaaS portals, compliance audit pipelines, and retrieval-augmented AI assistants.
4. **Offline-first design.** Once a lab is downloaded, code and dependencies run locally on modest laptops, with minimal data use and resilience to power and connectivity drops.

Four-Stage Learner Journey

Stage	What happens	Measurable result
1. Enrollment	Subsidized intake, a foundational logic check, and setup of a modern local development environment.	Zero upfront tuition debt.
2. Practical labs	50–140 hands-on exercises per track with automated test feedback and peer code review.	Pass rate above 85% on practical tests.
3. Capstone	Teams build a working system for a real business case in scrum sprints.	Project defended before senior engineers.
4. Verified portfolio	A permanent public record of the learner's code, tests, and deliverables.	Employers can inspect work directly.

Verifiable credentials
Paper certificates are easily forged. Every Savadub credential links to a public verification page showing the learner's commit history, test results, and reviewed code, so employers and funders can audit the evidence themselves.

WHAT LEARNERS STUDY

4. Curriculum: Ten Career Tracks

Track	Courses	Labs	Hours	Weeks	Core technologies	Where it applies
Enterprise Java Backend and Distributed Systems (TRK-JAVA)	4	108	152	14–16	Java 21 LTS, Spring Boot 3.3, PostgreSQL 16, Redis, Keycloak	Banking switches, settlement, high-volume transactions
Enterprise GRC and Information Security (TRK-GRC)	5	146	164	16–20	SOC 2 Type II, ISO 27001:2022, NIST SP 800-53, PCI DSS v4.0, GDPR	Compliance audits and data protection
Data Science, AI Systems and ML Engineering (TRK-DS)	4	115	139	14–18	Python 3.12, PyTorch, scikit-learn, LangChain, FastAPI, MLflow	Health, agriculture, and business analytics
Cross-Platform Mobile with Flutter and Dart (TRK-FLUTTER)	5	100	115	20	Flutter 3.24, Dart 3.5, BLoC, Firebase, Codemagic	Android and iOS apps from one codebase
Frontend and Full-Stack JavaScript (TRK-FRONTEND)	4	113	151	20	TypeScript 5, React 19, Vue 3, Angular 18, Next.js 15	Interfaces for public and private sector services
Enterprise PHP and Multi-Tenant SaaS (TRK-LARAVEL)	3	104	158	16–18	PHP 8.4, Laravel 13, Filament v5, PostgreSQL	Portals, billing engines, business software
Node.js Backend and Server-Side Engineering (TRK-NODEJS)	5	109	138	18	Node.js 22 LTS, NestJS 11, Prisma, Socket.IO, Redis	Real-time feeds, messaging, delivery tracking
Offensive Security and Web App Pen Testing (TRK-PENTEST)	3	46	75	12–14	Kali Linux, Burp Suite Pro, Caido, OWASP Top 10	Finding vulnerabilities in financial and government systems
Savv Web Engineering (TRK-SAVV)	3	52	74	8–10	Savv Framework, PHP 8.2+, PWA	Lightweight sites that load on 2G and 3G networks
WordPress and Enterprise Web Engineering (TRK-WP)	4	80	111	12–14	WordPress 6.7+, WooCommerce HPOS, ACF Pro, REST API	Online stores and content platforms

Alignment. The tracks support UN Sustainable Development Goals 4 (Quality Education), 8 (Decent Work and Economic Growth), 9 (Industry, Innovation and Infrastructure), and 10 (Reduced Inequalities), and African Union Agenda 2063 priorities for science, technology, and youth.

Roadmap. Further engineering tracks, including streaming, are in development, and early registration is open for their inaugural cohorts.

WHY SAVADUB

5. Credibility and Track Record

1,400+	40	946+	1,250+
learners trained	courses built	hands-on labs	study hours

- **The work is already built.** Many grant initiatives spend their first years writing curricula. Savadub has already written, tested, and operationalized its courses and labs over three years, so grant capital flows to student subsidies, instruction, and outcomes.
- **Over 1,400 learners trained.** Students, practicing engineers, and compliance specialists have trained across Savadub curricula, and our experience is that African undergraduates with professional tools and structured projects reach practical proficiency within months.
- **Built by practitioners.** Our leadership and faculty design, build, and secure production software for African enterprises, including payment switches, multi-tenant cloud platforms, and compliance systems, and understand local network, power, and campus realities firsthand.
- **Own platform.** We built our own learning platform with automated code testing, offline lab caching, and public verification, avoiding third-party license costs that consume grant budgets.
- **Open-source engineering.** Savadub's Savv web framework is published as open-source software (MIT license) on Packagist, which funders and technical reviewers can inspect directly.
- **Collaborative with universities.** We work alongside deans, polytechnic heads, and SIWES directors, supporting faculty with training and automated grading without disrupting approved curricula.

Backed by Savadub Limited. Savadub Institute is the education division of Savadub Limited, whose corporate social responsibility endowment, together with partners, already funds part of the student subsidy. Grant funding extends that commitment rather than replacing it.

RETURN ON FUNDING

6. Value for Money

Dimension	Traditional bootcamps	Foreign certifications	Savadub (fully subsidized)
Cost per learner	$1,500–$2,500	$1,500–$3,500+	$150–$350
Student debt	High, or income-share agreements	Fees paid up front	None
Completion rate	15%–25%	Variable	Target above 80%
Proof of skill	Paper certificate	Multiple-choice exam	Public record with audited code
University link	None	None	Integrated labs and SIWES

What learners pay. Published tuition is $19–$29 per course and $59–$99 per self-paced track (list prices are $99–$149 per course and $367–$665 per track, so published discounts run about 80% on courses and 84–85% on tracks), and live mentored cohorts are capped at $500 per track. In a funded fellowship, the sponsor covers these fees and the cost of instruction.

Household Impact

Entry-level software, cloud, and security roles in Sub-Saharan Africa typically pay $6,000–$18,000 a year†, several times median per capita income. An employed professional commonly supports four to five relatives. A single graduate earning $12,000 a year can pay school fees for siblings, cover medical costs for parents, and spend locally.

An illustration, stated conservatively
$12,000 a year over ten years is $120,000 in earnings against a subsidy of about $300, a ratio of 400 to 1 before adjusting for what graduates might have earned anyway. Even if only one tenth of those earnings is attributed to the program, the return is 40 to 1. We will report observed outcomes from our tracer studies, not projections.

GOVERNANCE

7. Monitoring, Evaluation, and Accountability

Funders receive a dedicated dashboard with real-time data, rather than relying on surveys and photos.

- **Code telemetry:** commits, test pass rates, code reviews, and lab completions across all labs.
- **Equity monitoring:** female participation (target at least 40%), rural and peri-urban reach, and socioeconomic indicators, using consented, disaggregated learner records handled in line with applicable data protection law, including Nigeria's Data Protection Act 2023.
- **Outcome tracking:** employment, contract work, wage gains, and venture creation at 90 and 180 days after graduation.
- **Independent oversight:** third-party financial audits and external tracer studies.

Results Framework

Level	What we track	Verification	Target
Impact	Technical employment or contract work, wage gains, stronger national software capacity	Employer verification, income records, 180-day tracer studies	Over 75% in employment or contract work
Outcomes	Practical competence, passed assessments, completed internship defenses	Public code verification, employer surveys	Over 80% completion
Outputs	Learners completing tracks, labs, and capstones	Platform records, repository audit trails	100,000 learners over 48 months
Equity	Women and learners from state and underserved institutions	Intake and enrollment records	At least 40% female participation

INVESTMENT TIERS

8. Partnership Portfolios

Savadub invites bilateral agencies, foundations, impact funds, and corporate CSR programs to fund one or more of three tiers. The curriculum and platform already exist, so funding goes to reach: more learners enrolled, more universities equipped, and more verified graduates placed in work. Each tier below turns existing capacity into a defined number of people trained.

TIER 1
$500K–$1.5M

Sovereign Builders Fellowship
Supports 1,500 to 4,500 learners through full tracks, at roughly $333 per fellow. At least 40% of places go to young women and learners at underserved institutions. Includes track access, live instructor sessions, one-to-one code reviews, and structured SIWES-eligible project placements.

TIER 2
$2M–$5M

University Practical Lab Integration
Upgrades practical training in 25 public universities and polytechnics across 5 African countries. Embeds Savadub labs in core programming courses, trains more than 500 lecturers through Train-the-Trainer programs, and converts SIWES attachments into audited software projects for 20,000+ students.

TIER 3
$10M+

Pan-African Digital Public Infrastructure Accelerator (consortium level)
A multi-country initiative across Nigeria, Kenya, Ghana, Rwanda, South Africa, and the DRC, training software engineers, security and compliance specialists, and data and AI practitioners. Fellows build open-source digital public goods such as interoperable payment components, digital identity integrations, and health-record tools, aligned with AU Agenda 2063. At our modeled cost of $150–$350 per fellow, $10 million supports roughly 28,500 to 66,000 fellows; reaching 100,000 fellows over 48 months requires combined commitments of approximately $15–$35 million. Governed by a joint steering committee of funders, education bodies, and Savadub leadership.

Use of Funds

Category	Share	Purpose
Learner subsidies and data support	55%	Course seats, offline learning packs, and data stipends for low-income learners
Instruction and code review	20%	Instructors, teaching assistants, and industry capstone reviewers
Platform, telemetry, and security	15%	Cloud hosting, test-runner pipelines, verification registry, donor dashboards
Audit, tracer studies, and reporting	10%	Independent financial audits, employment tracing, and funder reports

RISK MANAGEMENT

9. Key Risks and Mitigations

Risk	Mitigation
Power and connectivity limits	Offline-first labs, local dependency caching, and data stipends
Low faculty or institutional uptake	Train-the-Trainer programs, automated grading tools, and alignment with approved curricula and SIWES requirements
Graduates not finding work	Capstones on real business problems, public verified portfolios, employer partnerships, and 90- and 180-day tracking
Credential fraud	Public verification tied to commits, tests, and reviewed code
Learner data privacy	Consent-based records, data minimization, and compliance with applicable data protection law
Currency and cost movements	Staged disbursement, quarterly financial reporting, and independent audit

PARTNER WITH US

10. Next Steps

We welcome a conversation with your grant committee, investment board, or country team to demonstrate the live platform, review the curriculum repositories, and draft a tailored partnership agreement.

1. Request a live platform demonstration and curriculum review.
2. Select the tier that fits your portfolio, or combine tiers.
3. Agree on reporting cadence, dashboard access, and governance.
4. Launch the first funded cohort.

CONTACT

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Website: https://institute.savadub.com

Curriculum catalog: https://institute.savadub.com/tracks (10 tracks, 40 courses, 946+ labs)

Headquarters: Lagos, Nigeria · Operating across Sub-Saharan Africa

Every dollar will be traceable to a specific learner, a specific commit, and a verified outcome.