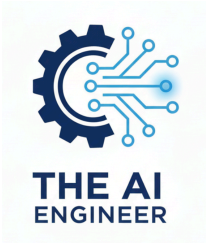
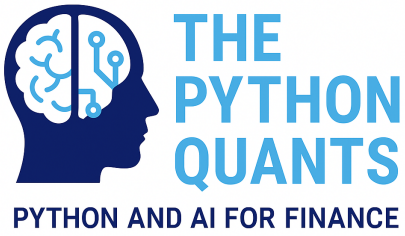
TPQ Learning Paths

Four Programs, Many Routes

The Python Quants

April 12, 2026





Contact: team@tpq.io

Ecosystem hub: https://tpq.io

Executive Overview

The Python Quants (*TPQ*) run a family of four programs that cover the full spectrum from first Python notebook to production-grade crypto operations: *The Data Scientist*, *The AI Engineer*, *The Crypto Engineer*, and the flagship *Certificate in Python for Finance (CPF)*. Each program stands on its own; taken together, they form a coherent learning ecosystem for the GenAI era.

This guide has two goals. First, it gives a compact executive summary of each program, including who it is for, what skills it develops, and where it sits in the TPQ ecosystem. Second, it outlines concrete learning paths: how to combine programs over time so that curiosity today turns into durable skills, visible portfolios, and better job-market outcomes.

Program Snapshots

The Data Scientist (TDS)

Who it is for. Motivated beginners, working analysts, and students from all disciplines who want to build practical Python and data-science skills from the ground up.
What you learn. From first Colab notebook and Python script through calm data analysis and visualization, into statistics and machine learning, and finally to project hygiene with tests, environments, and dashboards.
Portfolio outcome. A visible GitHub portfolio of notebooks, datasets, and small projects that demonstrate practical data work rather than theoretical familiarity.
Role in the ecosystem. TDS is the natural on-ramp into the TPQ ecosystem: once you can read and write notebooks comfortably, all other programs become easier to digest.

Explore TDS: `https://thedatascientist.dev`

The AI Engineer (TAE)

Who it is for. Engineers, applied scientists, and ambitious data practitioners who want to own the full lifecycle of AI systems — from prompt to served model — instead of staying at the notebook stage.
What you learn. Model selection, evaluation, and orchestration; serving models behind APIs; agentic patterns; safety and monitoring; and the engineering habits that keep AI systems reliable over time.
Portfolio outcome. Production-minded repositories with configuration, tests, deployment scripts, and monitoring hooks that demonstrate real AI engineering capability.
Role in the ecosystem. TAE turns the Python and data foundations from TDS or CPF into production-grade AI skills that transfer across industries.

Explore TAE: `https://theaiengineer.dev`

The Crypto Engineer (TCE)

Who it is for. Engineers, quants, and risk leads who need to understand custody, Bitcoin, exchanges, and on-chain data well enough to sign off on real systems.
What you learn. Cryptographic primitives, the Bitcoin system, market microstructure, data plumbing, custody architectures, incident drills, and operational runbooks.
Portfolio outcome. Labs, scripts, and runbooks that document how you think about wallets, fee policy, monitoring, and upgrades — evidence that you can handle crypto infrastructure beyond trading.
Role in the ecosystem. TCE is the crypto-specialist branch of the TPQ ecosystem, frequently paired with CPF for finance-heavy roles or with TAE for AI-driven crypto tooling.

Explore TCE: `https://thecryptoengineer.dev`

Certificate in Python for Finance (CPF)

Who it is for. Students, buy-side and sell-side professionals, data engineers, and career changers who want a deep, structured path through quantitative finance, Python, and AI.
What you learn. Python for asset management, algorithmic trading, derivatives pricing, risk, and AI in finance — plus the tooling, automation, and research workflows needed for production-grade work.
Portfolio outcome. A graded capstone project and a body of notebooks, case studies, and research artefacts that demonstrate end-to-end quantitative workflows.
Role in the ecosystem. CPF is the flagship track; it can stand alone or be combined with TAE and TCE for highly specialised AI or crypto roles in finance.

Explore CPF: `https://python-for-finance.com`

Exclusive Early Access and Bundle Options

Exclusive book access. Delegates in TDS and CPF receive early access to the upcoming third edition (700+ pages) of Dr. Yves J. Hilpisch's O'Reilly book *Python for Finance*, adding a deep reference that supports both data-science and finance-focused paths.
Bundle option. A comprehensive bundle combining CPF, The Data Scientist, The AI Engineer, and The Crypto Engineer is available via `https://python-for-finance.com`. This bundle is the most direct way to secure the full ecosystem on one invoice.

Learning Paths for the GenAI Era

The four TPQ programs can be combined in different ways depending on background, time, and career goals. The paths below highlight why each route makes sense, which skills it builds, what portfolio assets emerge, and why those outcomes matter in the current job market.

For brevity, we use the following abbreviations throughout this section: TDS (The Data Scientist), TAE (The AI Engineer), TCE (The Crypto Engineer), and CPF (Certificate in Python for Finance).

Path 1 — TDS Solo

Why it makes sense. This path is ideal for students, analysts, and career changers who want a solid, affordable starting point before committing to longer or more specialised programs.

Skills acquired.

- Python fluency for data work: clean scripts, notebooks, and basic automation.
- Practical statistics, visualization, and first machine-learning models.
- Project hygiene: environments, version control, basic testing, and documentation.

Portfolio. A GitHub portfolio with datasets, notebooks, and small projects that show you can take a raw question, explore the data, and present a defensible answer.

Job-market value. In the GenAI era, employers still need people who can structure data, debug notebooks, and ship reliable analyses; TDS demonstrates those foundations clearly and teaches the kind of principled reasoning that makes LLM prompting and result checking much more effective than naive "ask and trust" usage.

Path 2 — TDS → TAE

Why it makes sense. Once TDS has made notebooks and data work feel natural, TAE turns that foundation into end-to-end AI systems — a common trajectory for analysts and junior data scientists.

Skills acquired.

- From experimentation to deployment: serving models behind APIs and workflows.
- Prompting and orchestration for LLMs, agents, and hybrid systems.
- Monitoring, evaluation, and safety practices for long-lived AI services.

Portfolio. Repositories that include both exploratory notebooks and deployable AI services with configuration, tests, CI hooks, and monitoring stubs.

Job-market value. Roles labeled "AI engineer" or "ML engineer" increasingly expect candidates to prove they can bridge prototype and production; this path makes that bridge visible.

Path 3 — TDS → TCE

Why it makes sense. For learners drawn to crypto infrastructure, TDS provides the Python and data backbone, while TCE adds custody, Bitcoin, and market operations.

Skills acquired.

- Data-engineering skills for on-chain and off-chain market data.
- Understanding of wallets, keys, fee policy, and Bitcoin internals.
- Operational readiness: monitoring dashboards, incident drills, and upgrade playbooks.

Portfolio. Labs and scripts showing blockchain data pipelines, wallet drills, fee-policy simulations, and monitoring setups tied back to TCE runbooks.

Job-market value. Teams responsible for exchanges, custodians, or crypto products are under scrutiny; this path signals that you understand both data and operational risk, not just trading.

Path 4 — TDS → CPF

Why it makes sense. Learners who first validate their Python and data skills with TDS can then invest in CPF as a long-term finance specialisation, reducing overwhelm and increasing throughput during CPF.

Skills acquired.

- Deep quantitative-finance knowledge across asset management, trading, derivatives, and risk.
- Advanced Python engineering for research, backtesting, and portfolio analytics.
- AI-supported workflows for pricing, forecasting, and decision support.

Portfolio. TDS projects plus CPF case studies and a graded capstone that together span from basic analytics to institutional-grade research.

Job-market value. Employers in finance look for demonstrable depth; this path pairs a clear on-ramp with a flagship credential, making progression visible and defensible.

Path 5 — TAE → CPF: AI-Focused Trading

Why it makes sense. For professionals aiming at algorithmic-trading or systematic-investing roles, combining CPF with TAE concentrates learning around AI-enhanced trading workflows.

Skills acquired.

- Strategy research, backtesting, and risk analysis from CPF.
- AI-assisted research, coding, and model serving from TAE.
- Deployment and monitoring of trading-related AI services and tools.

Portfolio. Research notebooks, strategy libraries, and AI-powered tools (screeners, signal generators, monitoring services) that show how ideas move from concept to live service.

Job-market value. The combination speaks directly to quant and trading teams that are modernising their stacks with AI while preserving rigorous risk control.

Path 6 — TDS → TAE → CPF: Data Science and AI for Asset Management

Why it makes sense. Asset-management teams increasingly rely on data pipelines, dashboards, and AI-supported decision tools; CPF combined with TDS and TAE aligns tightly with that reality.

Skills acquired.

- Portfolio theory, factor models, and risk analytics from CPF.
- Robust data pipelines and visualisation skills from TDS.
- AI and LLM-based assistants for research, reporting, and client communication from TAE.

Portfolio. End-to-end asset-management projects: from raw data to factor dashboards, risk reports, and AI-assisted research notebooks.

Job-market value. This path maps directly onto "quant analyst", "data-driven PM", or "AI for asset management" roles, demonstrating both domain depth and modern tooling.

Path 7 — CPF + TCE: Crypto Operations Specialisation

Why it makes sense. Combining CPF and TCE is powerful for roles that must bridge institutional finance and crypto infrastructure: risk, treasury, or product-management positions in firms with both traditional and crypto exposures.

Skills acquired.

- Pricing, risk, and portfolio concepts from CPF.
- Custody, on-chain data, and exchange operations from TCE.
- Integrated views on how crypto systems affect balance sheets and risk reports.

Portfolio. Case studies that combine CPF-style analysis with TCE-style operational drills, such as risk dashboards for exchange exposures or custody configurations.

Job-market value. Firms need people who can speak both "regulatory finance" and "crypto systems"; this path provides evidence of that translation ability.

Path 8 — Full Ecosystem: TDS, TAE, TCE, CPF

Why it makes sense. For senior practitioners or long-term planners, securing the entire bundle turns TPQ into a multi-year learning and reference platform rather than a single course.

Skills acquired.

- Python and data foundations (TDS).
- AI engineering for deployment (TAE).
- Crypto infrastructure and operations (TCE).
- Deep quantitative finance (CPF).

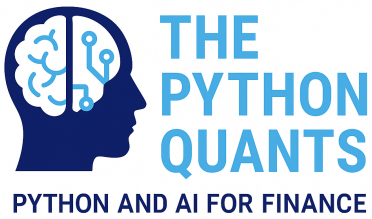
Portfolio. A layered body of work: notebooks, services, labs, capstones, and runbooks that show progression from beginner projects to specialised, domain-heavy artefacts.

Job-market value. This route signals long-term commitment and range: you can talk to quants, data scientists, AI engineers, and crypto-ops teams with equal credibility. It is also the clearest "Super Quant" path in the TPQ ecosystem, combining today's most important skills with a solid, future-proof foundation in Python, data science, AI, quantitative finance, and crypto systems.

Contact

The Python Quants

TPQ Training Ecosystem



Stay connected:

team@tpq.io

tpq.io

linktr.ee/dyjh