

# AI in Higher Education



## Role Domains, Archetypes, and Allocation

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# 1. Core idea

Generative AI reduces the time and effort required for many knowledge tasks in universities. AI in higher education can therefore be best understood as an allocation shock, as it can create cognitive and temporal surplus<sup>1</sup> and a potential to introduce a sudden increase in usable cognitive capacity. The resulting surplus time and cognitive bandwidth may be allocated somewhere else, for example, teaching, administration, publication throughput, programme-building, or boundary exploration.

In this context, the observable “impact” of AI is largely the pattern of reallocation rather than the tool itself. What becomes visible after adoption depends on (1) the role you occupy, (2) what that role is evaluated on, and (3) where the surplus is directed. That is why identical tools produce different institutional outcomes: AI simply amplifies the optimisation function already operating inside the institution.

To make this analysable, we begin with role domains, then specify archetypes within those domains. Archetypes are not fixed identities; they are modes that people can combine and may oscillate between.

## 2. Two role domains in higher education

Higher education contains two broad performance domains.

The first is the academic domain: roles where some combination of teaching, supervision, research, and scholarly service is expected and evaluated. The weighting differs by institution and contract, but the evaluation logic includes scholarly contribution.

The second is the administrative and professional domain, spanning the full operational chain, from executive leadership (VC/DVCs and directors) through governance, finance, human resources, legal, quality assurance and ICT, down to frontline service teams handling admissions, registrations, timetabling, student finance, and case management. These roles are not evaluated on teaching or publishing; they are evaluated on institutional reliability: strategy execution, coordination across units, compliance and auditability, service turnaround, documentation integrity, and continuity of operations.

AI impact can only be interpreted relative to these evaluation logics.

## 3. Archetypes in the academic domain

The academic domain contains roles where the performance function includes teaching and/or research, alongside supervision and scholarly service. Within this domain, AI adoption tends to cluster into a small number of recurring optimisation patterns and archetypes that describe how academics direct AI-generated surplus time and cognitive bandwidth. The archetypes below are not fixed identities; they are dominant modes that individuals may combine or shift between depending on workload, incentives, and career stage.

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<sup>1</sup> Cognitive surplus is the extra thinking capacity created when AI offloads routine mental work (summarising, drafting, formatting, searching, triaging), so the same person can redirect attention to higher-order judgment (concepts, design, critique, decisions).

Temporal surplus is the extra time created when AI compresses task duration and reduces rework (faster first drafts, faster iteration, fewer administrative steps), so the same workload consumes fewer hours.



## Archetype A1: The Operational Academic

This archetype uses AI primarily to stabilise workload and improve reliability in teaching, supervision, and engaged scholarship. The optimisation target is operational resilience: reducing friction, improving consistency, and protecting bandwidth.

AI is deployed to structure lectures, refine assessment design, draft high-quality feedback, scaffold supervision interactions, and reduce the transaction cost of routine administration. The surplus created by AI is intentionally reinvested into teaching quality, responsiveness, and workload sustainability. The key empirical signature is that research output remains broadly unchanged. This is not a failure of AI use; it reflects deliberate allocation of the surplus elsewhere.



## Archetype A2: The Career Optimiser

This archetype uses AI to increase performance within formal evaluation systems that reward measurable research outputs. The optimisation target is progression under institutional rules.

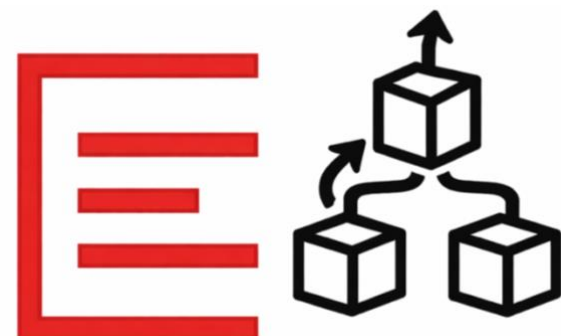
AI compresses the publication pipeline: faster drafting and revision, faster synthesis of literature, quicker compliance alignment to journal requirements, and the ability to run multiple manuscripts in parallel. The surplus is reinvested into submission velocity and pipeline density. The signature outcome is higher publication volume, typically with stable venue profile, and managed intellectual risk. The focus/optimisation function here is throughput under constraints.



## Archetype A3: The Program Builder

This archetype uses AI to build a coherent, cumulative research agenda that compounds. The optimisation target is intellectual capital formation: constructs, mechanisms, measurement approaches, and a recognisable programme.

AI is used less as a writing accelerator and more as a cognitive instrument for stress-testing ideas, refining constructs, interrogating mechanisms, exploring boundary conditions, and enforcing cross-paper coherence. The surplus is reinvested into deeper iteration and integration across projects. The signature outcome is increasing conceptual density and coherence; publication count may be moderate, but the agenda becomes legible and cumulative, often accompanied over time by gradual movement in influence or venues.





## Archetype A4: The Frontier Explorer

This archetype uses AI to explore high-uncertainty conceptual terrain and expand disciplinary boundaries. The optimisation target is directional exploration rather than predictable output.

AI is deployed for cross-domain synthesis, paradigm interrogation, mechanism invention, and hypothesis generation beyond field conventions. The surplus is invested in exploratory work that may not map neatly to conventional pipelines. The signature outcome is higher variance: uneven publication rhythm, occasional step-changes in visibility or cross-field uptake, and non-linear influence patterns. The defining feature is not volume but discontinuity—periodic leaps in what is thinkable or measurable.



## 4. Archetype in the administrative and professional domain

### Archetype P1: The Executive Allocator

This archetype governs institutional direction rather than operational throughput (VC/DVC/CFO/COO). The optimisation target is strategic allocation under constraints: reputation, risk, resource deployment, political legitimacy, fundraising, and performance against council/departmental targets.

AI is deployed for scenario construction, rapid synthesis of briefs, strategy memos, stakeholder communications, policy positioning, risk scanning, and decision-cycle compression. The surplus is reinvested into faster strategic iteration, higher decision bandwidth, and tighter coordination across portfolios. The relevant outcomes are strategic coherence, responsiveness under uncertainty, and improved governance tempo.



### Archetype P2: The Compliance Architect

This archetype maintains institutional integrity across units (Registrar/Directors: QA, Legal, HR, Finance, ICT governance). The optimisation target is reliability: policy coherence, auditability, regulatory compliance, procedural fairness, and system stability.

AI is deployed for policy drafting and harmonisation, documentation standardisation, audit trail preparation, guideline translation into operational checklists, exception handling, and reporting consistency. The surplus is reinvested into fewer compliance breaches, clearer process design, improved traceability, and reduced organisational fragility. The relevant outcomes are audit readiness, consistency, and reduced compliance variance.



## Archetype P3: The Service Throughput Operator

This archetype delivers high-volume institutional services (registration/admissions/timetabling/finance ops/faculty admin). The optimisation target is throughput with quality: turnaround time, queue reduction, error rate control, and service consistency under load.

AI is deployed for triage, templated communications, form and document preparation, workflow automation, case summarisation, scheduling, and handoff coordination. The surplus is reinvested into faster cycles, fewer errors, and more predictable service delivery. The relevant outcomes are turnaround time, accuracy, and customer experience consistency.



## 5. Allocation, not identity

The archetypes describe dominant allocation regimes, not fixed identities. Individuals can move between regimes, but the feasible mix is constrained by role-level evaluation logic and operating tempo. Academics often run multi-track portfolios across A1–A4 (e.g., stabilise teaching while maintaining a promotion pipeline and intermittently pushing frontier work). Administrative professionals also operate as portfolios, but typically within and across P1–P3: executives oscillate between strategic allocation and compliance crisis response; senior managers shift between compliance design and service stabilisation; frontline operators may take on local process redesign while maintaining throughput. Allocation therefore varies by semester load, audit cycles, leadership transitions, funding shocks, and incident-driven governance.

The analytical question shifts from *who are you?* to *where did the surplus go, and under what constraints?*

What share of AI-generated surplus is allocated to (A1) operational resilience, (A2) throughput/pipeline velocity, (A3) programme coherence, (A4) frontier exploration, and on the administrative side, (P1) strategic allocation, (P2) compliance integrity, and (P3) service throughput?

## 6. The institutional implication

Institutions often assume AI adoption will uniformly increase productivity. That assumption fails because AI does not impose a single productivity definition. It amplifies the institution's incentive design. Where volume is rewarded, volume may rise; where operational compliance is rewarded, compliance may improve; and where intellectual autonomy is protected and valued, AI may accelerate programme formation and boundary exploration.

AI in higher education is therefore not a singular phenomenon. It is a role-dependent optimisation instrument whose effects are best understood as incentive-amplified allocation outcomes.

### About the Author

Prof. Prince Sarpong is an Associate Professor of Finance at the School of Financial Planning Law, University of the Free State, and a post-disciplinary systems architect whose work spans corporate finance, financial psychology, AI epistemics, and institutional behaviour. He has developed several frameworks, including Brittle Financial Health, Antifragile Financial Therapy, Institutional Financial Therapy, and the Cognitive Growth Index (CGI)—a generative AI model for mapping intellectual recursion and adaptive cognition.

His broader intellectual ecosystem, Sarpong Strategia, anchors a set of transdisciplinary ventures: the Centre for Financial Psychology and Systems (CFPS) in Bloemfontein, South Africa; Financial Therapy for Men Inc. and Fortis Strategia in Sacramento, California; and Applied AI Epistemics, a research lab focused on epistemic research and reform in the age of artificial intelligence.

Prof. Sarpong currently serves on the advisory board of Epistemica, an epistemic engineering firm, and AI 2030, a global nonprofit for responsible AI. His work has been featured in Yahoo Finance, Fast Company, San Francisco Chronicle, The Australian Financial Review, RealTid (Sweden), The Psychologist (Ukraine), and MT/Sprout (Netherlands).

Prof. Sarpong's current work confronts the limits of traditional disciplinary boundaries by designing systems that metabolise pressure into structure across money, identity, capital, and corporate leadership.



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