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Objective: *AI, Search, and Data Executive*

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Executive Summary

- **AI & Engineering Executive:** 20+ years building and scaling 0-to-1 AI products across enterprise and consumer platforms, spanning generative AI, NLP, computer vision, search, and recommender systems.
- **End-to-End ML Systems Ownership:** Led teams responsible for the full ML lifecycle, including data strategy and feedback loops, model training and fine-tuning, inference architecture, deployment, and evaluation—translating research advances into reliable, high-impact production systems.
- **Production Delivery at Scale:** Built and led cross-functional organizations delivering AI systems used by tens of millions of users, driving measurable business outcomes under real-world constraints across latency, cost, quality, safety, and compliance.
- **Systems-First Builder:** Deep expertise turning ambiguous research and modeling problems into scalable, high-performance AI platforms, with clear ownership, crisp technical strategy, and sustained product advantage.

Key Achievements

- **LLM-Based AI for Microsoft PowerPoint (2024–Present):** Architected and delivered agentic LLM systems for slide generation, editing, evaluation, and on-brand grounded content. Built image-based slide generation and template selection pipelines. Founded and scaled the AI & Data team (1→16) in one year; delivered Copilot capabilities driving **20%+ user engagement** and informed Office-wide investment decisions through strategy whitepapers and benchmark-driven model evaluations.
- **Data-Centric Document Intelligence at Adobe (2019–2023):** Designed and deployed a new high-performance PDF semantic parsing system to replace a legacy object-detection + rules pipeline.
 - Achieved **2× latency improvement** and processed **10 documents end-to-end in <10 seconds**.
 - Improved accuracy from **45% → 65%**, matching transformer-based models (LayoutLM at **63%**) with significantly lower cost and complexity.
 - Built a **privacy-preserving active learning system** using short-lived production data, dark launches, automated evaluation, and targeted human labeling—fully GDPR compliant.
- **ML Platforms at Salesforce (2016–2019):** Built the Community Cloud ML organization from scratch. Delivered feed ranking, multiple recommender systems, spam detection, Q&A, chatbots, and enterprise search—driving **20%+ engagement lift** and accelerating adoption of Transformer-based models.
- **Commerce Search at Walmart (2014–2015):** Led an 80+ person team to rebuild the e-commerce search stack from scratch, including ranking, query understanding, spell correction, and type-ahead—resulting in **23% revenue growth** and **17% sales uplift**.
- **Recommender Systems at UpWork (2013–2014):** Built a near real-time contractor recommender system from scratch (**+4% hiring rate**); established experimentation and analytics platforms supporting M&A diligence.
- **Search at eBay & Amazon (Earlier Career):** Architected ML ranking for eBay Cassini (**+6% revenue**) and image search for fashion; at Amazon A9, developed global ranking infrastructure and relevance evaluation systems.

Areas of Expertise

- **AI & Information Retrieval:** Built and shipped large-scale search, ranking, recommendation, and multimodal AI systems across enterprise and consumer products.
- **AI Systems & Execution:** End-to-end AI platforms under real-world constraints—latency, throughput, cost, evaluation, safety, and compliance.

- **Leadership & Responsible AI:** Building high-performing AI organizations, advancing responsible AI practices, and aligning applied science with strategic product outcomes.

Professional Experience

Head of AI and Data → Senior Principal Scientist, Microsoft PowerPoint (Office 365) *Mar 2024 – Present*

- **AI Strategy & Agentic Architecture:** Defined and executed the end-to-end AI and data strategy for PowerPoint Copilot. Architected LLM-based agentic systems enabling slide generation, editing, rewrite, summarization, Q&A, reference-grounded and on-brand content generation, and structured Office XML creation.
- **Business Impact:** Delivered Copilot capabilities driving **20%+ user engagement** and measurable productivity gains across global enterprise and prosumer users.
- **Org Formation & Talent Bar:** Built and scaled an applied science and data organization from **1 to 16** within one year. Recruited senior AI talent with strong research records or deep production experience; established a hiring bar focused on conceptual depth, critical thinking, and rigorous problem solving.
- **Evaluation, Grounding & Quality Systems:** Designed end-to-end evaluation frameworks for slide generation and editing, covering relevance, factual grounding, brand compliance, layout quality, and regression detection across model, prompt, and orchestration changes.
- **Multimodal Intelligence & Design Systems:** Led development of image-based slide generation, template selection, and design recommendations by integrating LLM reasoning with visual, layout, and template-retrieval signals.
- **Infrastructure, Safety & Model Lifecycle:** Partnered with Microsoft Research on foundation-model alignment, safety evaluation, and deployment readiness. Improved inference latency and cost efficiency through Azure GPU tuning, caching, and retrieval-path optimizations.
- **Strategy & Competitive Intelligence:** Authored internal AI strategy whitepapers and conducted frontier model evaluations and benchmark-driven capability assessments to inform multi-year product and investment decisions across Office.
- **Senior Principal Scientist Scope (Dec 2025–Present):** Expanded mandate to frontier model evaluation and technical direction. Led rigorous assessments of diffusion-based language models versus autoregressive LLMs for PowerPoint NLP workloads, informing a decision to defer adoption due to determinism and schema-control gaps. Rebuilt infographic image-generation evaluation to address score saturation and dataset bias; demonstrated Nano Banana Pro outperforming Imagen variants (**5 pts**) and Flux (**10 pts**) on presentation-layer quality, while identifying unresolved gaps in instruction adherence and structural completeness—directly shaping subsequent model selection and control strategy.

Founder, Stealth Healthcare AI Startup

Sep 2023 – Feb 2024

- Founded and built a healthcare-focused AI prototype exploring LLM-based patient education and medical literacy.
- Designed end-to-end architecture including retrieval-augmented generation (RAG), domain grounding, and evaluation safeguards for factuality and safety in medical content.
- Led rapid prototyping to validate product and technical feasibility; paused further development to return to large-scale applied AI leadership roles.

Director of Machine Learning & Engineering, Adobe

Jul 2019 – May 2023

- **Organizational Leadership & Re-Architecture:** Directed a global 40–60 person applied science and engineering organization delivering AI capabilities across Acrobat, Sign, Stock, Creative Cloud, and Experience Cloud. Re-organized Document AI from a centralized functional science model into product-aligned teams (3 product teams + 2 horizontal teams for data and edge models), improving alignment and throughput between research and product engineering.

- **Data-Centric Document AI at Scale:** Led the design and production deployment of a new document-understanding system built to meet strict latency and throughput SLAs. When transformer-based approaches (e.g., Detectron/LayoutLM) met accuracy targets but failed performance constraints, architected a compact-model pipeline combined with a data-centric training loop—achieving **2× latency reduction, 3–4× throughput gains**, and improving model quality from **45% to 65%**, matching transformer-level accuracy in production.
- **Privacy-Preserving Active Learning System:** Designed a GDPR/CCPA-compliant active learning framework using short-lived production data, privacy-preserving embeddings, public PDF analog matching, dark launches, and automated evaluation. High-impact samples were selectively routed for human labeling based on evaluation signals, enabling continuous quality improvement without retaining sensitive customer data. System was deployed across Acrobat and Adobe Sign pipelines.
- **Generative & Retrieval-Based Document Intelligence:** Led development of **Acrobat Assist**, delivering retrieval-augmented summarization and Q&A for PDFs. Built a privacy-centric Azure-based ML pipeline enabling rapid iteration on document intelligence features while meeting enterprise compliance requirements.
- **Multimodal Search & Recommendations:** Architected CLIP-based semantic search for Adobe Stock and ML-driven recommendation systems for Creative Cloud, improving recall, precision, and content diversity at global scale.
- **Data Platforms & Cost Efficiency:** Built a unified audience-discovery platform for Adobe Experience Cloud using fast nearest-neighbor retrieval and scalable clustering. Simplified pipelines and parallelized execution, reducing infrastructure costs by **4×** while improving marketer adoption and pilot customer satisfaction.

Director of Machine Learning & Engineering, Salesforce

Jul 2016 – Jul 2019

- **0→1 ML Organization Build:** Founded and scaled the first applied ML organization for Salesforce Community Cloud, recruiting and developing the initial modeling teams and establishing end-to-end ownership across modeling, data pipelines, evaluation, and deployment. Grew the organization to 40+ ML scientists and engineers across four geographically distributed teams (SF, Bellevue, and EU).
- **Feeds, Recommendations & Engagement (Community Cloud):** Designed and shipped ML-based feed ranking, multiple recommender systems, and personalization pipelines, driving **20% improvements in engagement and DAU-related metrics** across large enterprise customer deployments.
- **Trust, Safety & Forum Intelligence:** Built large-scale spam and abuse detection systems, forum Q&A retrieval models, and content-quality classifiers operating over millions of users and billions of interactions, improving content health and user trust in community ecosystems.
- **Service Cloud AI Roadmap & New Teams:** Co-defined the Service Cloud AI roadmap in partnership with an acquired startup founder and senior product leadership. Formed and led a new ML team focused on Service Cloud intelligence, delivering article recommendation, virtual assistant capabilities, and AI-driven case handling.
- **Adoption-Focused AI Systems:** Introduced vertical-specific AI packages and instrumentation to determine whether Einstein features were effective for a given customer's data, significantly improving feature adoption and customer satisfaction. Delivered AI-assisted case completion workflows where models auto-filled service case data, reducing agent effort and resolution time.
- **Conversational & NLP Systems:** Led development of enterprise-grade chatbots, dialogue recommendation systems, and early BERT-based NLP models for Service and Community Clouds, accelerating adoption across retail, banking, and hospitality customers.
- **Governance, Privacy & Compliance:** Partnered with legal, security, and ethics teams to establish GDPR- and HIPAA-aligned data governance, model review, and deployment standards for customer-facing AI systems.
- **Enterprise & Product Alignment:** Worked directly with enterprise customers, product leadership, and GTM teams to translate business problems into ML formulations, ensuring solutions delivered measurable customer and business value.

Executive Consultant (via anjangoswami LLC)

Oct 2015 – Jun 2016

- **Etsy:** Advised senior leadership on search ranking architecture, query understanding, and relevance evaluation; influenced roadmap decisions for ML-based discovery systems.
- **Neurotrack:** Led applied computer vision work improving Alzheimer’s diagnostic accuracy by **20%** through enhanced pupil-tracking algorithms and model validation.

Director of Search Science, Walmart E-commerce

Jun 2014 – Oct 2015

- Led an end-to-end AI transformation of Walmart’s commerce search, directing **80+ engineers and scientists** across ranking, recall, and query understanding.
- Re-architected ML-based ranking, demand-aware retrieval, and type-ahead systems, driving **+23% revenue uplift** and **+17% sales conversion**.
- Built the applied science org and talent pipeline, including university partnerships and expansion of the Bangalore R&D center.

Open Source & Applied Research

- **Thinker (Open Source):** Unified LLM inference router with registry-driven model selection, schema-based request language (ThinkerQL), secure credential management, and full observability; supports OpenAI, Anthropic, and Ollama. github.com/smartinfer/thinker
- **LLM Systems R&D:** Early architectural work on **Boson LLM**, a declarative training–inference orchestration framework; explored compact reasoning models for structured tasks.
- **Whitepaper:** *Data Engines for Autonomous Vehicles: A Reference Architecture* — scalable designs for scenario mining, synthetic data generation, multimodal ingestion, and continuous-learning pipelines. anjangoswami.com/data-engine-paper
- **NeurIPS 2025 Workshop:** H. Kang, E. Bao, A. Goswami. *VLM-SlideEval: Evaluating VLMs on Structured Comprehension and Perturbation Sensitivity*. arXiv:2510.22045

Earlier Career: Elance–UpWork, eBay, Amazon A9, Microsoft

2005 – 2014

- **Elance–UpWork (Director):** Built contractor ranking and recommendation systems from scratch, increasing hiring rates by **4%**. Established experimentation and causal inference frameworks (A/B tests, quasi-experiments) to quantify model impact and guide marketplace policy decisions.
- **eBay:** Transitioned core search to ML-based Cassini ranking, delivering **+6% revenue**; architected early fashion image-search pipelines.
- **Amazon A9:** Developed global ranking infrastructure and relevance evaluation systems supporting large-scale e-commerce search.
- Applied economic modeling principles—elasticity analysis, demand forecasting, and incentive-aware optimization—to improve discovery, ranking, and marketplace outcomes across buyer–seller platforms.

Patents, Publications & Thought Leadership

- **Patents (10+):** Search relevance, ranking systems, personalization, and recommendation algorithms. Representative patents include US 1020369, US 20120303615, US 20120221557. Full list: anjangoswami.com/patents
- **Publications:** IEEE Big Data (2015), SIGIR ECOM (2018), NeurIPS Workshop (2025). Full list: anjangoswami.com/publication/academic_publications.html
- **Essays:** Systems architecture, agentic AI, applied science leadership, evaluation methodologies. anjangoswami.substack.com and anjangoswami.com/technical_articles

Education

- **Ph.D., Computer Science** — University of California, Davis (AI, Distributed Systems)
- **M.S., Computer Science** — The Ohio State University (Distributed Data Mining)
- **M.Tech, Mechanical Engineering** — IIT Kanpur (Robotics, Vision, Planning)