

Muni Venkateswarlu Kumaramangalam

AI Product Manager | Agile Project Management | Production AI Systems | Blockchain Platform Delivery

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SUMMARY

AI Product Manager and Co-Founder at MaidLink with a PhD in computational sciences and 10+ years building AI products, enterprise platforms, and distributed systems. At MaidLink, owns the full AI product strategy, roadmap, and delivery: shipped a computer vision estimation system on Amazon Bedrock and LLM-powered agentic communication workflows, using Claude daily as a core PM tool for research synthesis, spec generation, and product decisions.

At Catalyst Technologies, owned the complete delivery of two enterprise blockchain platforms end to end, not just the product layer but the full technical execution: system architecture, workflow design, smart contract development and deployment, backlog management, and production release, coordinating across engineering, compliance, legal, and partner organizations using Agile/Scrum with Jira and Confluence.

The combination of hands-on AI product management at MaidLink and full-stack project ownership at Catalyst sits at the intersection of AI product management and technical project management.

CORE COMPETENCIES

AI Product Management: production AI product development (computer vision, LLM-powered agentic workflows), AI model selection and evaluation, responsible AI frameworks and evaluation frameworks, failure mode analysis, post-launch AI output monitoring, prototype-to-production delivery

Technical Project Management: Jira (sprint planning, backlog management, issue tracking, velocity tracking), Confluence (technical documentation, requirements management, architecture decision records), Figma (product design collaboration and wireframing), Agile/Scrum ceremonies (sprint planning, daily standups, retrospectives, sprint reviews), requirements documentation, user story and acceptance criteria authorship

AI Tools in Daily PM Practice: Claude (Anthropic) for research synthesis, spec drafting, user story generation, trade-off analysis, and workflow design; Amazon Nova Lite on Amazon Bedrock (AWS Lambda) for computer vision product delivery; ChatGPT for product decision support

Product Discovery and Delivery: 0-to-1 product execution, customer discovery, roadmap definition and sequencing, launch planning, adoption management, outcome metric definition and tracking

Blockchain and Platform Engineering: smart contract design and deployment (Ethereum, Polygon, Celo), decentralized registry architecture, carbon credit lifecycle management (mint/manage/retire), marketplace platform design, enterprise API integration

Cross-Functional Stakeholder Management: multi-organization delivery in matrixed environments, requirements translation from business to engineering, stakeholder communication across technical and non-technical audiences, cross-functional alignment across engineering, compliance, legal, and operations

Technical Depth: distributed systems, APIs and microservices, AWS Serverless, cloud-native architecture, SQL, Node.js, TypeScript, AI/ML systems

PROFESSIONAL EXPERIENCE

Product Manager and Co-Founder — MaidLink

January 2024 – Present · Calgary, Canada

Two-sided home services marketplace. Own AI product strategy, roadmap, Agile delivery, and customer adoption end to end. MaidLink's engineering build is my co-founder's domain; the product, requirements, and AI direction are mine.

AI Product: Computer Vision Estimation System (Amazon Bedrock)

- Diagnosed the root-cause failure in service estimation: clients cannot accurately assess their own home's condition. This is a perception problem, not a data problem. Designed a computer vision system as the structural fix.
- Wrote product requirements and acceptance criteria, collaborated with engineering on solution design using Figma for wireframes, coordinated delivery, and shipped to production beta.
- Platform: Amazon Nova Lite (foundation model) on Amazon Bedrock, deployed via AWS Lambda. Clients submit property photos; AI reads home condition and generates service type recommendations and estimated hours.
- Designed the prompting architecture using static prompts (fixed context and instruction layers) and dynamic prompts (user-specific input variables) to maintain consistent token usage and predictable output structure across requests.
- Defined the evaluation framework before engineering started: success thresholds for AI accuracy, acceptable failure modes, and escalation paths. Built a threshold-based quality gate: if the CV estimator output falls below confidence criteria, the system automatically falls back to the parametric estimator to present results, ensuring no estimation failure reaches the customer. Built post-launch monitoring for consistency, quality benchmarks, and failure pattern detection.

AI Product: LLM-Powered Agentic Communication Workflows

- Designed and shipped LLM-powered agentic workflows replacing a fragmented manual process: automated customer scheduling, follow-up, and status updates without manual intervention.
- Built on Claude (Anthropic) with structured prompt engineering and context management for consistent, reliable output at scale.

Claude as a Daily PM Tool

- Customer research synthesis: feed job outcome data, customer complaints, and field observations into Claude to extract structured product insight and identify root causes.
- Product spec and user story drafting: use Claude to draft PRDs, user stories, and acceptance criteria, then refine against engineering input before finalizing.
- Trade-off analysis: use Claude to evaluate implementation approaches, surface failure modes, and pressure-test product decisions before committing engineering time.
- Stakeholder communication: use Claude to draft status updates, roadmap summaries, and stakeholder-facing documentation efficiently.
- Workflow design: use Claude to design and iterate on agentic workflow logic and prompt structures before handoff to engineering.

Agile Delivery and Roadmap Ownership

- Own the week-to-week product cadence: sprint planning, daily standups, retrospectives, and mid-cycle check-ins to surface blockers early.
- Maintain and prioritize the product backlog, ensure the next highest-priority work is always scoped before the current sprint closes.
- Define and track outcome metrics: AI accuracy, adoption rate, job completion rate, and scope variance.
- Marketplace platform built and on hold: live usage data revealed process problems preventing scale. Made the call to pause and return to root-cause discovery rather than scale into a broken process.

Traction: 100+ clients served, 170+ jobs completed. Real outcomes feed AI model iteration and product decisions.

Blockchain Specialist — Catalyst Technologies Ltd.

March 2022 – December 2023 · Canada

Owned the complete delivery of two enterprise blockchain platforms: the GHG decentralized carbon registry and the Atlas carbon credit exchange. Full ownership spanned both the product and technical layers: system architecture, workflow design, requirements documentation, smart contract development and deployment, and production release coordination. Operated in a regulated, matrixed environment across multiple enterprise partner organizations.

Project management tools: Jira (sprint planning, backlog management, issue tracking), Confluence (technical documentation, requirements management, architecture decision records), Agile/Scrum methodology

GHG Carbon Registry — Decentralized Carbon Registry

- Designed, developed, and deployed a decentralized GHG carbon registry: a blockchain-based platform for verifying, capturing, minting, managing, and retiring carbon credits.
- Designed the end-to-end system architecture and workflows supporting the full carbon credit lifecycle, from issuance and verification through retirement and audit trail, ensuring regulatory compliance and on-chain immutability.
- Wrote and deployed smart contracts managing carbon credit minting, transfer, management, and retirement on Ethereum, Polygon, and Celo.
- Managed Agile delivery using Jira for sprint tracking and backlog management, Confluence for requirements documentation and architecture records. Ran sprint ceremonies: planning, standups, retrospectives, and sprint reviews.
- Collaborated with compliance and legal teams to translate regulatory requirements into platform specifications; coordinated delivery across multiple enterprise partner organizations.

Atlas Exchange — Carbon Credit Trading Marketplace

- Designed and deployed the Atlas exchange: a marketplace platform connecting carbon credit sellers and buyers for trading verified carbon credits.
- Defined marketplace mechanics, trading workflows, and the integration architecture between the exchange and the GHG registry.

- Authored requirements documentation, user stories, and acceptance criteria; managed the product backlog and coordinated cross-functional delivery across engineering, compliance, and external partners.
- Integrated blockchain infrastructure with traditional enterprise data and payment systems using API-driven architecture.

Delivery and Governance

- Translated complex regulatory and business requirements into structured product specifications for engineering teams across multiple partner organizations.
- Re-architected transaction systems, reducing transaction volume by approximately 95% through systematic trade-off analysis across performance, scalability, and cost.
- Delivered platforms with primary emphasis on security, auditability, and compliance across a regulated, multi-organization environment.

Postdoctoral Researcher

Ben Gurion University of the Negev (Israel) · University of Quebec · University of Calgary October 2015 – October 2021

Research spanning fault-tolerant distributed systems and privacy-preserving cryptographic protocols, with a consistent focus on correctness, resilience, and security properties in distributed environments.

- Designed self-stabilizing protocols for distributed secret sharing schemes (Ben Gurion University): systems that automatically recover to a correct computational state without external intervention, even when all parties in the network are simultaneously corrupted. After a bounded number of rounds, each node converges back to a correct state for arbitrary input, providing fault tolerance guarantees beyond standard Byzantine fault models.
- Designed privacy-aware distributed systems for secure credential issuance and verification (University of Quebec and University of Calgary), applying cryptography, access control, and data integrity mechanisms to production-grade distributed deployments.
- Collaborated with industry partners to translate fundamental distributed systems research into practical security applications.
- Published 20 peer-reviewed papers across distributed systems, self-stabilizing protocols, blockchain, and secure computation.

EDUCATION

PhD, Mathematical and Computational Sciences · National Institute of Technology Karnataka, India · 2016

Master of Computer Applications · Anna University, India · 2009

Bachelor of Science · Sri Venkateswara University, India · 2006