Manas Talukdar

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Manas Talukdar is a senior industry leader in Enterprise AI and Data Infrastructure with nearly two decades of experience. He has made key contributions to the world's preeminent process data historian. He has held leadership roles at startups and large enterprise companies, building and leading organizations developing large-scale AI and Data products used globally. He is a Senior Member of IEEE and a Fellow at several distinguished professional organizations. He mentors startups and industry professionals, and often speaks at conferences. Manas also reviews technical publications in AI and Data. He has filed multiple patents in data processing and ML for AI. His contributions have been recognized through honors and invitations to join prestigious AI organizations.

EDUCATION

North Carolina State University, Raleigh, NC, *Master of Science, Electrical Engineering*	Aug 2005 – May 2007
Gauhati University, Assam, India, *Bachelor of Engg., Electrical Engg.*, Dean's List - 5 semesters	Aug 2000 – June 2004

RECENT EXPERIENCE

Director of Engineering, Labelbox, San Francisco, CA   Feb 2024 – present

AI Platform (Feb 2024 – present)

- Led platform, product, ML engg. & applied research orgs in US & EU to develop an AI platform & AI SaaS products.
- Delivered initiatives in RLHF, SFT. LLM evaluation, fine-tuning & experimentation, data IO & processing, platform resiliency, etc.
- Led initiative to enhance AI platform with generative AI agentic capabilities, leveraging Model Context Protocol to enable LLM tool calling for product features built as AI agents.
- Built a globally scalable platform to train and tutor AI by highly skilled individuals in specialized domains. Enabled successful company pivot and significant revenue growth.

Director of Engineering, C3 AI, Redwood City, CA   Dec 2022 – Feb 2024

Data Infrastructure, AI/ML Platform (Dec 2022 - Feb 2024)

- Manager of managers. Led org of 6 teams building multi-cloud, distributed data infra PaaS for large-scale AI/ML applications.
- Delivered several new initiatives critical for the company, broadly at the intersection of large-scale distributed systems, data infrastructure and machine learning.
- Wide impact involving improvements in data ingestion performance for the AI Platform by orders of magnitude, building a new data exploration product that enables data scientists to be productive from day 1 by abstracting exploration, workflow and execution (engines), design and development of a novel metadata based feature store for machine learning, etc.
- Specific initiatives include data integration, data exploration and productionization, feature store, vector stores for GenAI, AI/ML application development tooling, etc.
- Helped create new intellectual property leading to patents.

Senior Engineering Manager, C3 AI, Redwood City, CA   Jan 2022 – Dec 2022

Data Infrastructure, AI/ML Platform (Jan 2022 - Dec 2022)

- Grew the Data org from 3 to 5 teams.
- Responsible for key initiatives and new products in data infrastructure, distributed computing, ML, dev tooling for AI/ML application development and metadata-driven ML-based extensible UI framework.
- Established structures across org for growth and retention - rotation across teams, project time, etc.
- Drove growth for org by mentoring employees into key roles in both individual contributor and management track, hiring high-impact talent and resource planning for initiatives.
- Drove growth across department by hiring individual contributors and recruiting engineering managers.
- Coached new engineering managers into hiring and growth methodologies.
- Started a newsletter for sharing technical information and departmental updates.

Engineering Manager, C3 AI, Redwood City, CA   Jan 2020 – Dec 2021

Data Infrastructure, AI/ML Platform (Jan 2020 - Dec 2021)

- Established the Data org within Platform engineering department. Grew a team of 6 to an org ~20 engineers across 3 teams building multi-cloud, distributed data infrastructure Platform-as-a-Service (Paas) for large-scale AI/ML applications. Defined charter for each team. Identified, mentored and promoted senior engineers to lead roles for each team. Drove further growth across department. Established a new interviewing framework. Worked with Talent Acquisition to streamline hiring process.

- Ensured delivery of high-impact projects.

- Led performance benchmarking initiative against industry solution(s).

- As part of department leadership refined expected signals and attributes for each role and level in individual contributor track. Instituted a framework for promoting engineers, specially to lead role.

- Started data-driven performance analysis across engineering department for developers and teams, mining data from Jira, GitHub, Git, etc. Instituted a 360° feedback framework.

- Started a regular Lunch and Learn initiative across org for knowledge sharing and translation of tribal knowledge into technical documentation.

Engineering Manager, OSIsoft, LLC., San Leandro, CA   Jan 2016 – Jan 2020

PaaS, SaaS Product (Metadata Solution) (Feb 2019 - Jan 2020) [https://bit.ly/2FZfzED]

- Managed and grew a team working on large-scale distributed Platform-as-a-Service (PaaS) and Software-as-a-Service (SaaS) metadata solutions for storage and analysis of high-throughput streaming process data to enable asset management using context for industrial applications. Context involves models, hierarchies, objects, for equipment and data, as a single repository.

- Led team through successful completion of program for enabling data science on streaming data by automated generation of metadata using rules.

- Responsible for hiring, mentoring developers, performance reviews, 1-1's, sprint velocity and overall team health.

- Product owner. Worked closely with cross-functional stakeholders (Product and Program Managers, Architects) to manage product backlog and drive road-map.

- Managed dependencies across multiple teams and guided the team with design and architecture decisions.

Event Notifications Product (Feb 2019 - Jan 2020) [https://bit.ly/3uNi84j]

- Worked with product manager to roll out fixes on an as-needed basis and managed developer escalation.

IoT Product (May 2017 - Jan 2019) [https://bit.ly/3nOpaS0]

- Started new team for project on large-scale, enterprise-wide, high-throughput streaming data collection from IoT devices. Interviewed candidates for hiring into the team. Gathered requirements and defined product direction in collaboration with product management, group lead and customers.

- Motivated using Git for source control. Developed an administration API with back-end and front-end. Developed a logging infrastructure. Developed mechanism for high-throughput streaming data egress from IoT module to enterprise data storage solutions for both real-time and historical data.

PaaS Product (Storage Solution; Core Platform and Infrastructure) (Jan 2016 - April 2017) [https://bit.ly/2FZfzED]

- Founded and grew a team of software developers working on multi-tenant distributed Platform-as-a-Service (PaaS) solution. Recruited and on-boarded developers into team. Drove software engineering best practices, including agile methodologies. Took project from prototype to product. Ran sprints, assisted developers with tasks and enabled team to accomplised goals. Developed a caching service - passed on to developers in the team. Created a high-value engineering team that developed high-visibility, large-scale distributed data platform product which spawned next-generation series of enterprise software solutions.

- Defined system architecture for a cloud-native distributed Sequential Data Store PaaS solution to ingest, process, store, analyze, query, share billions of (real-time and historical) streams from millions of industrial devices and Internet-of-Things (IoT) sensors. Collaborated cross-functionally with customers, product managers and engineering architect to identify requirements and develop road-map.

- Managed all aspects of the Software Development Life Cycle (SDLC). Introduced CI/CD. Researched new partner technologies and provided feedback. Presented at meetings and conferences.

Prior Experience

Senior Software Developer, OSIsoft, LLC., San Leandro, CA   Feb 2015 – Jan 2016

PaaS Product (Storage Solution; Core Platform and Infrastructure) [https://bit.ly/2FZfzED]
- Architected and developed scalable, distributed micro-services using new cloud technology – Service Fabric.
- Security champion for team. Threat modeled components and data flow in the project and led review sessions.
- Architected full-stack real-time observability (health monitoring and logging) systems with data access and client APIs.
- Interviewed, on-boarded and mentored new engineers in project.

Software Developer, OSIsoft, LLC., San Leandro, CA   May 2011 – Jan 2015

PaaS, SaaS R&D Project (Storage Solution; Core Platform and Infrastructure) (June 2014 - Jan 2015) [https://bit.ly/2FZfzED]
- Founding team member and lead developer in charge of creating core platform, infrastructure for distributed streaming-data Platform-as-a-Service (PaaS) and Software-as-a-Service (SaaS) solutions.
- Developed components of multi-tenant distributed data store.
- Added data replication functionality leveraging leader-election and distributed consensus algorithms.
- Developed automated multi-threaded chaos tests. Created standards for DevOps - passed on to other engineers.
- Mentored new engineer in developing a real-time health monitoring framework.

SaaS Product (Feb 2013 - June 2014) [https://bit.ly/3liljOb]
- Part of team that developed first cloud product at OSIsoft.
- Developed front-end and back-end components of cloud-based enterprise SaaS product for process data transfers.
- Developed secure RESTful APIs. Did threat modeling of cloud services and corresponding on-prem components.
- Architected and developed an alarm infrastructure.
- Designed and developed a cloud-based software management, delivery and auto-update system.
- Enhanced SQL database schema and developed full stack from server-side data-access layer to client-side APIs.
- Developed DevOps tools and data-mining queries for reporting on health statuses of multi-tenant cloud application.
- Developed multi-layered modular and scalable WPF applications.
- Consistently delivered committed items in fast-paced, quick turn-around, scrum-based development cycles. Led knowledge transfer sessions to handover work to new team member(s) while transitioning to a R&D project.

Middleware (SDK) Product (May 2011 - Feb 2013) [https://bit.ly/3rvmxqC]
- Developed and maintained test automation frameworks. Developed and maintained software delivery systems using Wise and WiX. Enhanced and maintained codebase (specifically data buffering) for core middleware.
- Worked with uses in Fortune 500 companies through multiple successful releases.

QA Engineer, OSIsoft, LLC., San Leandro, CA   July 2008 – April 2011
- Architected and developed (automated) test systems for multiple products, reducing release cycle testing time, using C++, .NET, SQL, test automation tools like SilkTest and OOP based UI automation tools.
- Worked with senior developers on middleware code for core product.

Engineer, Rotational Engineering Program, OSIsoft, LLC., San Leandro, CA   July 2007 – June 2008
- Resolved OSIsoft PI software issues and went on site visits to configure and troubleshoot PI Software.
- Improved effectiveness of software health metrics by 92%. Delivered proof-of-concept projects that led to new sales.
- Developed automated test frameworks.

Graduate Teaching Assistant, ECE Dept., NCSU, Raleigh, NC   Jan 2007 – May 2007
- Graded assignments, administered website, answered questions and was instructor for semester project related classes in a controls course.

Graduate Research Assistant, ADAC Lab, ECE Dept., NCSU, Raleigh, NC   Aug 2006 – Dec 2006
- Surveyed publications, wrote portions of research project proposals and reviewed IEEE proceeding submissions.
- Mathematically modeled and simulated a formation controller for mobile robots over a wireless network.

Summer Session Teaching Assistant, ADAC Lab, ECE Dept., NCSU, Raleigh, NC   May 2006 – July 2006
- Developed an embedded micro-controller software library and maintained a slew of mobile robots.

- Supervised, mentored and graded students for term projects in programming, mechatronics, controls.
- Created new labs and instructed a class of 85 students for experiments in a mechatronics graduate level course.

Specialist Customer Support, IBM, Daksh e-Services Private Limited, India   Jan 2005 – March 2005

- Resolved broadband internet connectivity issues with overseas customers.
- Worked with real-time databases to update connectivity status.

Summer Intern, Control and Instrumentation, NEEPCO, AGBPP, India   July 2003 – Aug 2003

- Involved in upgrade of a 33.5 MW turbine-generator control unit at NEEPCO, a $35 billion power company.
- Obtained field experience in power systems, generation, electrical machines.

PUBLICATIONS

- R. Vanijjirattikhan, M. Talukdar, and M-Y. Chow, "Accumulated Effect Parameter Tuning Method for Geometrical Path Tracking of Wheeled Mobile Robots", *in the proceedings of the IEEE/ASME International Conference on Advanced Intelligent Mechatronics*, Zurich, September 2007.

SKILLS

Management

- Organizational growth, engineering productivity.
- Agile methodologies (scrum, kanban), backlog management, requirements analysis, collaborating with users, product, services, support, etc.
- People management, 1-1s, performance reviews, career development, performance improvement plans, on-boarding.

Computing

- Artificial intelligence, machine learning, PaaS, SaaS, large-scale distributed systems, cloud computing, data infrastructure, micro-services, IoT, APIs, SDKs, multi-threading, service-oriented architecture, web services, data modeling, software threat modeling.
- Data structures, algorithms, design patterns, systems design.
- **Languages:** Very comfortable: Java, C#. Comfortable: Python, JavaScript, TypeScript. Learning: Go. Academics, early career: C/C++, SQL.
- **Data Infrastructure:** SQL, NoSQL, OSIsoft PI.
- **Architectural Constructs:** REST, MVVM, MVC.
- **Frameworks:** Angular, Vue.js, Reactjs. Node.js, .NET, ASP.NET, WPF, WiX toolset.
- **Tools:** VSCode, Visual Studio, IntelliJ, Jira, Confluence.
- **Systems:** Git.
- **Microsoft Azure:** Service Fabric, AppInsights, Event Hubs, Blobs, IoT, VMs, DevOps, etc.
- **Amazon Web Services (AWS):** S3, IAM, EC2, RDS, DynamoDB, EMR, AutoScaling, SQS, SNS, API Gateway, Lambda, etc.
- **Google Cloud Platform (GCP)**

Languages: Fluent in Hindi, Assamese (North East Indian language). Elementary Bengali. Basic Sanskrit.

PATENTS

Data Processing and Machine Learning for AI

- Intelligent data processing system with metadata generation from iterative data analysis [Filed].
- Intelligent data processing system with multi-interface frontend and backend [Granted].
- Metadata-driven feature store for machine learning systems [Filed].

Professional Engagements

Professional Memberships and Affiliations

- Member of the Forbes Technology Council [February 2025].
- Member and Fellow of the British Computer Society (BCS) [February 2025].
- Member of the Association for Computing Machinery (ACM) [September 2024].
- Member of the Innovative Executives League [August 2024].
- Member of the American Society for AI [July 2024].
- Member of the Harvard Business Review Advisory Council [July 2024].
- Member of the AI Accelerator Institute [April 2024].
- Member of the MIT Technology Review Global Insights Panel [January 2024 - February 2025].
- Member and Senior Fellow of AI 2030 [January 2024].
- Senior member of IEEE [August 2023].

Fellowships

- Senior Fellow focusing on AI at The Digital Economist [April 2025].
- Fellow of the British Computer Society [February 2025].
- Senior Fellow of AI 2030 [January 2024].

Board Memberships

- Advisory Board member of AI 2030 [January 2024 - December 2024].

Judging Roles

- Judge for Globee Awards.
- Judge for American Business Awards (part of the Stevie Awards).
- Judge for Titan Business Awards.
- Judge for Noble Business Awards.
- Accepted as judge for 2024 SIIA CODiE Awards.

Editor and Reviewer Roles

- Technical Editor and Reviewer for Manning Publications [May 2024].

Advisory Roles

- Mentor/Advisor for startups at Alchemist Accelerator, a venture backed accelerator for early-stage startups that monetize from enterprises. [February 2024]
- Engineering leadership mentor at Plato [March 2024].
- AI/ML, career development, technology and leadership mentor at MentorCruise [April 2024].
- Technology advisor for AI, ML, distributed systems, etc. at Guidepoint, Office Hours, Capvision.

Speaking Engagements

- Frequent speaker at engineering and leadership conferences on AI, Data, etc.
- Often lead or participate in roundtables and panel discussions.
- Delivered graduation speech on AI at university commencement ceremonies.

Volunteering

Mentoring

- Engineering mentor, specifically around AI/ML, at ADPList.
- Engineering and leadership mentor at The Mentoring-Club.
- Mentor at The Mentoring Club.

Honors

- **Invited to be a member of the Forbes Technology Council, February 2025.**

> " Forbes Technology Council is an invitation-only, fee-based organization comprised of leading CIOs, CTOs and technology executives. "

> Members of Forbes Technology Council are respected technology leaders selected for the Council for their depth and diversity of experience. ... Eligible applicants are vetted by our selection committee, and if approved, are invited... Examples of Forbes Technology Council members include founders, partners, and CEOs of technology companies, C-level technology executives such as CTOs and CIOs, and VPs of technology teams.

> Forbes Technology Council is a vetted professional networking community for leading CIOs, CTOs and senior technology executives.

- **Fellow of the British Computer Society (BCS). Issued by British Computer Society (BCS), February 2025.**

> BCS Fellowship is home to the most influential professionals in the digital industry.

> Suitable for: Inspirational technology leaders, innovators and academics.

> ...recognition you've earned as a pioneer of the modern profession. ...extending your influence as a thought leader and for giving back to the industry with opportunities for policy formation, education, public engagement and more.

- **Invited to be a member of the American Society for AI (ASFAI), July 2024.**

> American Society for Artificial Intelligence (ASFAI) is a private & prestigious club that brings together prominent leaders & executives. ... Membership is reserved for established leaders and executives, C-Suite and Senior-level, and includes a robust vetting process and with Board approval. Members are of diverse backgrounds and industries; including pioneers in AI, entrepreneurs, executives, technologists, philanthropists, authors, investors, lawyers, policymakers, researchers, computer scientists, engineers, doctors, and professors.

- **IEEE Senior Membership. Issued by IEEE, August 2023.** *IEEE senior membership requires extensive experience and reflects professional maturity. It is based on a detailed scrutiny of documented and sustained achievements and is bestowed only to those who have consistently made significant contributions to the profession.*
- Successfully completed a 5-year diploma from **Assam Fine Arts and Crafts Society**, India.
- Performance in Science and Mathematics in All India Secondary School Examination in the top 1/8th.
- Successfully qualified in All-India Mathematics Olympiad conducted by Delhi Association of Mathematics Teachers.