Manas Talukdar

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Software engineering leader experienced in building, managing multiple teams and growing organizations. More than 14 years of industry experience. Skilled in Agile methodologies, measuring and improving engineering productivity. Excellent communication skills. Successful collaborations with cross-functional stakeholders. Instituted best practices and processes to streamline rapid growth across multiple teams. Quick learner, self-driven. Significant experience in cloud computing, distributed systems and data infrastructure. Recent focus includes real-time, high-throughput streaming data and scalable AI, ML platforms. Current core competencies in large-scale systems design, people, project management and organizational growth.

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

Engineering Manager, C3 AI, Redwood City, CA   Jan 2020 – present

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

- Managing a group of 3 teams building multi-cloud, distributed data infrastructure Platform-as-a-Service (Paas) for large-scale AI/ML applications.
- Responsible for key initiatives to deliver major high-visibility features.
- Led performance benchmarking initiative against industry solution(s).
- Established the Data group within Platform. Grew a team of 6 to a group of ~20 engineers across 3 teams. Defined charter for each team. Identified, mentored and promoted senior engineers to lead roles for each team. Continuing to drive further growth across organization. Established a new interviewing framework. Worked with Talent Acquisition to streamline hiring process.
- As part of org 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 org 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.
- Manage dependencies across multiple teams and guide the team with design and architecture decisions.

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

- 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 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 use of Git as 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 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. Assisted team members with sprint tasks and helped them complete 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 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, 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/2KULeLY]
- 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.
- Backlog management, requirements analysis, collaborating with customers, product, services, support, etc.
- People management, 1-1s, performance reviews, career development, performance improvement plans, on-boarding.

Computing
- PaaS, SaaS, distributed systems, cloud computing, micro-services, IoT, service-oriented architecture, APIs, web services, multi-threading, data modeling, software threat modeling, Agile methodology (scrum, kanban).
- Data structures, algorithms, design patterns, systems design, machine learning (basic).
- **Languages:** Very comfortable: C#, Java. 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.

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

ADDITIONAL

- 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.