

## Highlights

### “ Fullstack Frameworks & Architectures

- Works in production: micro services, MVC, MVVM, SOA.
- Hands-on expertise: Django, Flask, Node Express, Java Spring Boot.
- The first author of published architecture papers: *“Lenovo Open Cloud Automation Reference Architecture”*, *“RedHat Hyperconverged Infrastructure (RHHI) Reference Architecture”*.

### “ Frontend

- Adept at frontend development using Typescript, React, Redux, Angular, Storybook, UmJS, Material UI, Ant Design, Bootstrap.

### “ Virtualization, Containerization & Cloud Platforms

- Proficient in KVM, libvirt, QEMU, VMWare, Virtualbox, Vagrant.
- Proficient in Helm, Kubernetes (K8S), Docker, Containerd, AWS, Azure; Infrastructure as Code: Terraform, Pulumi, Canonical MAAS, Juju.

### “ CI/CD Pipelines & Testing

- Proficient in initiating/maintaining CI/CD pipelines: Jenkins, GitHub Actions, Bitbucket Pipelines.
- Skilled with DevOps tools: Jenkins, Ansible, ELK, Prometheus, Grafana; GitOps: Helm, Kubernetes (K8S), Harbor, ArgoCD.
- Skilled in testing: Postman, Cypress, Selenium, PyTest, TDD/BDD.

### “ API Development & Integration

- Proficient in creating RESTful APIs using OpenAPI, Swagger, and Django Rest Framework (DRF).
- Proficient in API integration: RESTful, GraphQL, JSON, XML, SOAP, JWT.

### “ Scalable Solutions & Databases

- Strong DB and ORM skills: SQLAlchemy, Hibernate, MySQL, PostgreSQL, Mongo, InfluxDB, Elasticsearch.
- Proficient in scalable and HA solutions: RAID, switch Port Group, network bonding, cache, message queue, failover.

### “ Development Leadership

- Expert in software SDLC throughout; Proficient in Git, DevOps, GitOps, release, project management (Jira, Confluence).
- Proven track records of success in all maturity levels of an organization: startup (5-20), mid-size (100-500), global enterprise. Proved capacity in roles: PM, Team Lead, System Architect, DevOps, QA, Developer.

### “ Global Team Management& Team Enhancement

- Rich experience in managing global teams across geo and time zones.
- Avid knowledge sharing to enhance overall team quality and efficiency.

## Experience

**3/2022 - 3/2023** Lucidum, Principal System Architect

- “ Led design of the next-gen product architecture to drive expansion of target industry and customer base. Transformed on-prem-only model to hybrid and cloud-native. Introduced and integrated various AWS & Azure services to achieve a successful transition of twelve production systems.
- “ Managed a global engineering team. Provided oversight to roles including Project Manager, UX designer, ML scientist, developers (Python, Java, React), QA, and DevOps. Held a direct reporting line to the CTO.
- “ Managed successful execution of 2 major releases, 6 minor releases, and 12 patch releases. Initiated GitOps practices using GitHub Actions, GitHub Package Registry, and Semantic Release.
- “ Actively participated in coding across every facet of the engineering endeavor, spanning the entire product stack (Python, Java, Typescript, React, Redux), QA using Cypress, and DevOps involving Helm, Kubernetes (K8S), Jenkins, Ansible, Python, Terraform, and Pulumi.
- “ Took the lead in code reviews across a portfolio of 50+ Git repositories, covering a wide spectrum of programming languages and syntaxes, ranging from Python, Javascript, Java, SQL, Groovy, YAML, Json, XML, TOML.
- “ Drove substantial improvements in test automation efficiency and effectiveness. Revamped 800+ Cypress end-to-end (e2e) tests within 6 weeks, improved performance by 50% and achieved 100% automation in UAT.
- “ As primary developer and maintainer of CI/CD pipelines featuring multi-branch building, matrix testing, A/B deployment, integration of GitHub Code, GitHub Actions, GitHub Package, AWS, and Azure.
- “ Hardened security in DevOps workflows by initiating CVE scanner (code, docker image), and integration with secret managers including Hashicorp Vault, Ansible Vault, AWS & Azure Secret Managers.
- “ As the company’s AWS and Azure administrator responsible for overall configuration and application of cloud services including SSO, IAM, ACR, ECR, ECS, RDS, Aurora, EC2, S3, Fargate, Lambda, CloudWatch, SNS, VPC, WAF, ELB, TargetGroup, Route53, CloudFront.

**11/2016 - 3/2022** Lenovo US, P8, Advisory Engineer, Senior Solution Architect, Team Lead

- “ As the principal system architect and the first author of the “[Lenovo Open Cloud Automation Reference Architecture](#)” (see “Publications”). Led a global team of six developers successfully transformed the concept into a market-ready product within a 13-month timeframe. The solution was showcased in “[MWC Barcelona 2019](#)” and won a \$100-million contract.
- “ As the principal system architect and the first author of the “[RedHat Hyperconverged Infrastructure \(RHHI\) Reference Architecture](#)” (see “Publications”), a VM-workload solution based on Lenovo hardware including 3-12 server configuration, Glusterfs storage, layer-3 networking, HA, fault tolerance, zero-touch node discovery and provisioning. Key technologies included RHHI, Glusterfs, Netbox, Cloudform, Python, Ansible, Jenkins.
- “ As the principal architect of the “[Lenovo Workload Solution Store](#)”, a baremetal orchestration solution based on declarative taxonomy. The

technology serves as the core foundation of the ThinkAgile VX product. Key technologies included Django, React, Ansible, Canonical MAAS and Juju.

- “ As team lead of the ThinkAgile CP product, a hybrid cloud platform with on-prem infrastructure and AWS-based management plane. Led a global team of five UI/UX, two backends, one QA, and two DevOps, delivering six production releases over two years. Oversaw development and quality in Java, Python, AngularJS, Angular, Redux, QA in Cypress, Ops in Jenkins, ArgoCD, Helm, Kubernetes (K8S), and production deployment in AWS.
- “ As lead Python developer a Datacenter Infrastructure Management (DCIM) system based on Netbox, administering a portfolio of in-house infrastructure comprising over 300 servers and switches located globally. Stack include Django, React, Celery, Redis, MySQL, Docker, Ansible, ENOS/NOS.

**01/2015** PY Consulting, Founder, Freelance

**- present** *UNC Chapel Hill, School of Medicine, Contractor*

- “ Initiated the organization’s first Docker-based deployment and CI/CD in production. Led the school’s DevOps initiative by authoring its technology roadmap, and oversaw development of its DevOps Phase 2 & Phase 3 endeavors. Provided trainings on best practice and tooling in Git, Docker, Jenkins, Python, Javascript, Ansible, Cypress.

*Massachusetts General Hospital, Volunteer*

- “ Containerized the deployment of two popular machine learning tools among medical researchers — "deeplabcut" and "simba", reducing installation time from days to 30 minutes. Mentored a team of three Python developers on Git, Docker, Python, DevOps.

*World Bank’s “Digital Development Partnership” program, Contributor*

- “ Built “*World’s Snapshot*”, a data-driven web application based on the World Bank’s and the DHS’s data API. Technology used: React, Redux, D3.js, Highcharts, Google Charts, eCharts, Plotly, and Dygraphs.

*Wei Fashion Group, Contractor*

- “ Designed and implemented the company’s first-gen ERP system catered to its unique business model using Django, MySQL, Alibaba Cloud (an AWS equivalent), consolidating the sales, inventory, and accounting of this Shanghai-based company including its HQ and two global subsidiaries in US and Europe.

*Shang Xue Tang, Contractor*

- “ Designed and POC-ed its B2C web application targeting high-Ed market. Efforts included Django, Redis, Celery, MySQL, API integration, web page crawling, natural language processing (NLP).

*Linkage, Contractor*

- “ Initiated its software development SDLC from the ground up. Fostered development culture of the startup. Created its “*2016-17 Technology Roadmap*”, providing a comprehensive and forward-thinking vision for the company to grow. Hands-on coding in Python ODOO (OpenERP).

- 11/2013 - 01/2015** Beijing Lean Strategy Consulting Group, Associate Director
- “ In charge of a high-value Request for Proposal (RFP) worth \$3 million with a Fortune 500 customer, assuming full responsibility of its fulfillment including business analysis, system design, software development, deployment, maintenance, P&L, human resource. Oversaw details in all aspects of the stack including Java Spring, Hibernate, MySQL, Selenium, SonarQube, Huawei Cloud Enterprise (an AWS equivalent).
- 07/2010 - 11/2013** CrunchTime! Information Technology, Project Manager
- “ Managed a Request for Proposal (RFP) valued at \$10 million with Yum! China spanning three years. Were the point-of-contact for requirement and gap analysis, CRM, feature prototyping, deployment rollout, user training, and technical support. Technology exercised: Java Spring, Oracle DB, Django, MySQL, Google App Engine, Salesforce.
  - “ Developed the company’s Salesforce-based Customer Portal, which won the Bronze prize of the “*2011 Steve Awards for Sales & Customer Service*”. Implemented using Salesforce APEX, CSS, jQuery.
  - “ Designed and built the company’s first mobile application using Cordova, HTML5 and jQuery Mobile.
- 04/2009 - 04/2010** China Everbright Bank, Financial Leasing Division, Business Manager
- “ Had an overall responsibility of a \$2 million RFP acquiring its core ERP system. Led a team of 4 business analysts and 5 software engineers executing requirement analysis, system evaluation and selection.
- 04/2004 - 05/2007** Bit 9 Inc. (Carbon Black), Researcher, Tech Lead
- “ Led a groundbreaking research of securing the Windows NT kernel, resulting in winning a \$6 million A-round venture capital investment from Kleiner Perkins.
- 07/1998 - 04/2004** Instron Corp., Senior Engineer
- “ Developed real-time firmware of its hardness testing and impact testing products. Technology: VxWorks RTOS, real-time Linux, C, National Instrument DAQ, Texas Instruments DSP, Allen-Bradley PLC.

## Education

- “ *MBA (04/2007 - 09/2008)*, Boston Univ., International Management & Finance
- “ *Master of Science (09/1995 - 05/1997)*, Ohio Univ., Electrical Engineering
- “ *Bachelor of Science (09/1990 - 07/1994)*, Shanghai JiaoTong Univ., China, Electrical Engineering

## Publications

1. <https://lenovopress.com/lp1148-red-hat-hyperconverged-infrastructure-for-virtualization-reference-architecture>
2. <https://lenovopress.com/lp1149-lenovo-open-cloud-reference-architecture>

## References

Name	Contact	Capacity
Yan, Kai	kai@lucidumsecurity.com	Manager
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