Max Roby

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I'm a Full Stack Engineer with 10+ years experience across multiple segments of the tech industry specializing in Automation, Architecture, and Gamification. Currently, I'm developing Cost-Optimized, Hyperconvered, & Ephemeral compute environments that are Fast and Carbon-Neutral. I'm excited to use Computer-Vision, Machine Learning, Digital-Twins, and Renewable Energy to redefine how we collaborate and empathise with each other in digital spaces.

Outside of work, I enjoy learning to cook new foods, watching a backlog of wholesome shows, and learning about Amsterdam's hidden playgrounds as an examination of discoverability, logistics, and agency in systems design.

FedEx Express Senior Architect

2020 - Present

As Sr. Architect I led efforts to shift FedEx's European co-location and public cloud assets to on-prem and hybrid-cloud following the acquisition of TNT Netherlands. Coordinating with international teams, I developed a golden-path architecture using Ansible, Terraform, Azure Cloud, and VMware Tanzu, which aligned with international business OKRs and key strategic initiatives, specifically: Cost Optimization, Cost Observability, Speed of Service, Security, and Carbon-Neutrality.

To rapidly onboard teams to the platform, I developed:

1. Akv2k8s terraform module: end-to-end test and install of Azure Keyvault to Azure Kubernetes Service using both Managed Identities and Service Principles to synchronize secrets, keys and certificates between Azure and Kubernetes using mutating webhooks and init containers. Utilized the Kubernetes Alpha Provider to install CRDs required to automate testing
2. Azure Pod Identity terraform module: end-to-end test and install of aad-pod-identity, a project allowing Kubernetes clusters to access cloud resources, and teams access k8s using Azure Active Directory. Also utilized the Kubernetes Alpha provider for installing custom CRDs to automate testing

3. Terraform IaC modules for Keyvaults, secrets, certificates, keys, Blob storage accounts and containers, IAM, RBAC, AD groups, users, applications, identities, AKS clusters, Virtual Machines, and Scale Sets

4. Internal Memory-Cache/ORM (Python, Hazelcast, Postgres, Snap, Ubuntu Core), which broke through development deadlock caused by legacy processes offering a step-change solution to enable further cloud transformation.

5. Static website generators (mkdocs, jekyll material, python, webpack) and accompanying build/deploy pipelines (Azure, Github, Jenkins, Ansible, Terraform) for multiple teams to automatically generate documentation that is compliant with brand-standards for CSS, UX, Branding, and Accessibility.

6. DBaaS (MongoDB, Postgres 11, Hazelcast IMDG) which provided an approved selection of containerized database/cache products pre-configured and ready to be dropped into any project on the platform.

7. Dynamically generated Terraform/HCL (backends, tfvars, providers, versions, modules) from json, yaml, and database values allowing the creation/replication of the full azure production account as an ephemeral platform. This also enabled the use of terraform to use ephemeral identities in internal pipelines.

8. Multiple Terraform modules for use with company IaaC, PaaS, SaaS, and IAM/RBAC products. These modules added or enhanced features of the FedEx Azure cloud platform.

STRIVR Labs Senior Platform Engineer

2019 - 2020

As a Senior Platform Engineer, I was originally responsible for developing a new support and RMA process for the growing Virtual Reality startup. My primary focus was the development of automation and software to relieve delays VR Headset and SoC repair.

I then took over the duties of the former Principal Software Engineer and was tasked with using the tools and learnings from my previous assignment to optimize and enhance Ci/Cd, IaC, and embedded capabilities of the cloud platform to capitalize on changes to the market.

Crated/contributed to:

1. Lead developer for self-service and automated hardware RMA software product (ansible, bash, GCP, PSQL)that increased RMA throughput by automating diagnostics, troubleshooting, documentation, reporting and inventory of damaged/returned Linux SOC edge compute units and Oculus/Pico VR HMDs.

2. Lifecycle management of all corporate and client cloud infrastructure on GCP, and entire physical fleet of linux SOC edge compute units and Virtual Reality headsets via python, bash, ansible, terraform.

3. Virtual Reality Office tool allowing employees to create their own customizable VR office space (Unity3d, C#, .Net, Ubuntu, redis, postgres GCP), share it with friends in VR and export a custom Zoom background.

4. Cross-Training other Sr. Engineers on Unity 3D, Clonezilla, Grub, WSL, Ubuntu which helped cross-train isolated teams, leading to better remote collaboration between Seattle and California based teams.

5. Redesigning the full content deployment backend (python, shell, docker, Postgres 9, GCP, Ansible) which reduced time to deploy from weeks to less than 10 minutes by automating handoffs and establishing processes with SLAs for remaining stakeholders.

6. System, container, and live infrastructure security scanning via Snyk, Docker and Trivy, Ansible with GCP.

7. Linux SoC system image build and upgrade process using ubuntu pre-seed (and then cloud-init), vagrant, clonezilla and ansible

8. Logging scripts(Python, Bash) for dashboards/alerting (Stackdriver, Compute, Storage, Ansible, Bash, Slack) for cloud resources.

Political Campaign Full-Stack Developer

2019 - 2020

Approached by Collins campaign who wanted to use a free discord bot I had recently developed for gaming communities (C#, .Net Core, Discord.Net, AWS EC2, S3, IAM, SQL), but also expand the features for use in an activist community (SQL, Wix, Google Sheets). The bot allowed users to vote on topics, posts, and content - awarding eachother points for various activities. In this role, I added the following features for the clients needs:

1. User data persistence

2. External wix-based on-boarding process

3. Moderation team time tracking (C#, SQL)

4. Gamified content engagement tools (C#, Unity3D, SQL)

5. Custom role-based automation (C#, SQL)

6. Quarantine zones/roles (Discord.Net, C#)

7. Community organization/outreach functions (C#, Discord.Net, Google Sheets API, SQL, MailGun)

Pizza Hut Systems Engineer

2011 - 2019

Pizza Hut Connect LLC 2016 - 2019

As a Systems Engineer at Pizza Hut, I worked directly with the Principle Architect to guide decisions on hardware purchasing and Technology Road-Map development. I also served as the primary East US point-of-contact for manufacturers and partners (Dell, Wyse, VXL, Samsung, Zotac, HP,ParTech, NCR, Partner, Posiflex, Wincor/Nixdorf). I developed, executed and evangelized a standardized process for hardware onboarding evaluations, PoCs, and resolution of hardware-level issues (Bios, hardware revisions, drivers, peripheral compatibility) for an equipment footprint of over 50,000+ units and able to boast $10,000,000+ of negated hardware replacement costs during my tenure.

Developed as lead or contributed to the following:

- IaC for on-prem deployment of physical and virtualized distributed network training labs(VMware, VirtualBox, vagrant, Ubuntu, Windows, Linux, Ansible, PXE, AMT, iDrac). Simulating an edge Server + Multi-Client point of sale environment.

- Mobile Device Management and security testing (Samsung, tizen)

- Compatibility patches and scripts (Linux, bash, xorg, xinput, grub, udev, rc.local) and certified functionality of all new hardware (Point-of-Sale devices, Terminals, Peripherals, Tablets,Signage, Servers) entering Pizza Hut ecosystem on proprietary Linux(Ubuntu, SUSE, Debian) distributions which reduced the cost of entry for new franchisees and extended the life of hardware.

- Internal mobile app (Android, Android Studio, Java) to interact with proprietary software(Java, Linux, Bash) over PCI compliant wireless APs (SonicWall) used by 1000+ management-level employees.

- Interactive, dynamically-generated network and hardware visualization program (Unity 3D, C#, Bash, Python/Ansible, SQL, Ubuntu) called "Virtual Agent" which mapped, monitored, and diagnosed issues with store networks and hardware(Linux, Windows) identified as biggest call-drivers for the help-desk and interfaced with ticketing systems(BMC Remedy)_. Users received visual step-by-step instructions on how to resolve many common hardware and network issues without the need to contact an agent.

- Custom Windows image creation(Windows 7, 8, 10, registry, chocolaty, powershell) optimized for low-memory devices and PCI compliance.

Pizza Hut of America

2014 - 2016

- Directed OS migration hardware compatibility testing (Xorg, Xinput, grub, drivers) and certification of point-of-sale hardware and peripherals (servers, terminals,touchscreens, signage)

- Maintained and contributed to GM build pipeline (Bash, Powershell, Ansible, Vagrant) for Linux and Windows images

- Setup and Deployment of remote servers using PXE, Clonezilla, Acronis, Ansible, and Intel AMT.

- Performed system component (CPU, RAM, HDD, SSD) performance benchmarking (Linux, Bash, SQL, Vagrant) and guided hardware purchasing decisions for upgrade/replacement strategies.

- Created brand-standards enforcement and hardware life-cycle management reporting microservice (JavaScript, HTML, CSS, Python, flask) that converted internal documentation formats to markdown and wiki formats.

Pizza Hut Inc

2011 - 2014

- Created a new system of Help-Desk analyst KPIs and metrics(SQL, Cisco Agent, BMC Remedy, Excel) which vastly improved clarity of employee performance and reporting granularity.

- Designed and built gamified leader-board (Unity3D, C#, SQL, Cisco Agent, BMC Remedy) and training materials to supplement KPIs and metrics.

- Authored fully-automated and computer-assisted troubleshooting tools(Linux,Java,Bash) for Help-Desk employees to resolve non-technical, call-driving issues identified by leadership as resource intensive(Payroll, Inventory, Reporting, Ideal-usage, Labor)

- Mentored and trained L1 Help-Desk employees on Pizza Hut software & hardware stack(Linux,proprietary software (Java, SQL, bash), point-of-sale hardware, servers, and network equipment) Monitored(Solarwinds), troubleshot, and resolve network issues with

external help desks and vendors.

- Remote management of debian-based point-of-sale hardware (terminals, AIO devices, printers, cash registers, switches, routers) for 4000+ sites.

- Senior Analyst for RMA/advanced exchange process, lifecycle, and SLA with hardware vendors and service providers

- Managed network reliability monitoring and vendor interactions for remote sites as part of a team working with SolarWinds alerting and Sonicwall APs.

- Supported and contributed to proprietary business software (Java, Linux, SQL, Windows) and processes (payroll, inventory, cash management, training, scheduling) utilized by managers and employees daily in-stores.

Independent Developer Various

2009 - 2019

- Skyrim lighting mod(ENB, Nexus mods)which increased the visual fidelity of the game experience and resolved bug in the default eye-adaptation post-processing effect (OpenGL, C#) implementation on AMD crossfire.

- Skyrim free-camera mod (Papyrus) to allow manual camera DoF, lighting, ToD, and smoother movement for video/photo capture of game-play.

- World of Warcraft mod (Lua, WeakAuras) which would allow players to live out their Initial-D drifting dreams by playing euro-beat music and displaying animated speed lines in the UI whenever a speed-boost was detected as active on the player.

- Volumetric reverb and sound occlusions system (Unity3D, C#) based on a talk by David Sirland of Dice and methods used in Battlefield 3 to create realistic positional audio. System captures data about surrounding geometry and sound sources to determine the appropriate level and type of reverb to use as well as realistically occludes sounds based on line of sight, distance, and position.

- Spline-based particle animation system(C#, Unity3D) based on multiple GDC talks which combines a guided-generation spline system, scriptableobjects, and animation curve data to rapidly create and iterate on game assets while specifically paying attention to

proper use of animation principles(squash, anticipation, timing etc...)

- Input wrapper (C#, Unity3D, DirectInput) which allowed keyboard/game pad control schemes to be altered, created, saved by users at runtime in Unity3D. Provided enhancements such as: device agnostic syntax, per-axis sensitivity and dead-zone configuration, rumble support, ability to track active/inactive inputs, duration of inputs, and combinations/order of concurrent of inputs.

Musician & Music Technologist Louisville Ky

2006 - 2016

- Music Composition and Production using various Digital Audio Workstation software (Ableton Live, Fruity Loops Studio, Reason)
- Studio design, mixing student (Bizianes Music)
- Formal Education at Bellarmine University in Music Technology and Arts Administration
- Live and Studio Performance (Guitar, Bass, Percussion)
- Live Sound and Live Recording for small and medium sized venues
- Taste of Chaos Tour (2009), and Brewery Thunderdome (2008) appearances.
- Wolf-Howl Award (Dragon’s Eye Productions - Furcadia) for best original sound design
- Sound Design (Facebook Slots - Cat’s Eye Productions)
- Reddit.com/r/GameAudio community sound-design challenge organizer

Nursery Specialist Frank Otte's Nursery

2006 - 2009

- KY State Nurserymen's Training
- Forklift and Bobcat operation.
- Landscaping and consultation

- Sales associate at Nursery and Garden Center