Jagadish Krishnamoorthy

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- Software Engineer with 15 years of experience.
- Open-source contributor to various AI projects Pytorch, DeepSpeed, ONNX RT; Blockchain projects,; Google Coreboot project etc.
- Employed with **AMD** at present.
- Huge believer in open source projects. Contributing to open source projects in personal and professional experience on day to day basis.

AMD, Santa Clara 2018 – present

AI Frameworks
- Open source Contributor to Pytorch, DeepSpeed, ONNX RT and other AI frameworks and models GitHub projects from AMD / ROCm org.

  https://github.com/jaglinux/
  https://github.com/jagadish-amd/

- Working on Pytorch datatype such as fp32, tf32, ocp fp8, mx fp8, mx fp4 scaling, scaled_mm gemm, matmul gemm kernels, integration with BlasLT.
- Working on torch.cuda, distributed, c10d modules, integration with ROCm software stack.
- Single/multi GPUs training and inference using Pytorch DDP/DP, DeepSpeed libraries.
- Maintenance of Upstream Pytorch, release Pytorch branches, ROCm fork Pytorch branches.https://github.com/ROCm/pytorch
- Pytorch DDP training, RCCL / NCCL communications, AI models such as GPT, Bert, Cifar and transformer based models.
- GPU architecture, memory, streams, CUDA/HIP working knowledge.

PyTorch Metrics Tool Development
- Grafana dashboard, SQL, Github Workflow Action, Python helper script to produce metrics comparing ROCm vs Cuda.

GPU Cloud Webapp Backend, Infra developer (AMD Accelerator Cloud)
- Multi node, multi GPU AI / ML workload distributed training using PyTorch, Composer, HuggingFace.
- Pytorch DDP training, RCCL / NCCL communications, MPI, OpenMP
- Slurm (sbatch, salloc) usage for HPC jobs, multi node docker.
- Python Django (API server), SQL, MariaDB, Redis DB, Celery, Websocket Flask and Tornado framework, WSGI server , Sentry and Flower tools.
- Django REST framework, Django models, ORM, queryset, filter.
- Async tasks, scheduling, scaling on Celery, Redis broker.
- Amazon Cloud infra development (EC2, Storage, S3), Supervisor to handle program execution, Load Balancer, Nginix, Jenkins, Ansible, Cobbler.
- Dockers, Kubernetes (Deployment, Pods, GPU DaemonSet, RBAC)

Devops/ Infrastructure
- Designed and coded ROCm libraries CI setup in Docker environment.
- Testing of CI code moved to Kubernetes environment with 1:1 GPU test mapping.
- Involved in design and coding of Python based backend development of scalable application. The application runs multiple parallel workloads in the form of docker containers on a Kubernetes cluster. Rabbit MQ monitoring is used for Kubernetes

scaling.

Intel, Santa Clara   **2013 – 2018**

Open source Contributor to Google Coreboot and EC, Linux Kernel projects from Intel
[Chromium.org tree](#)
[Coreboot.org tree](#)

Samsung, Bangalore
2008 – 2012
- Samsung Galaxy S3 based project (ICS to JB upgrade): Porting SVNET2 based drivers for DPRAM
- Samsung Galaxy S3 based project (ICS): Handling HSIC drivers AP side.
- Samsung Galaxy S2 (ICS): Porting ICS (Ice Cream Sandwich) / LINUX 3.0 on GalaxyS2.

Blockchain projects
- Programming: Solidity, Vyper
- Frameworks: Web3.py, Brownie, Foundry, Hardhat, Truffle.
- **Participated in Eth Global Hackathon** (Feb2022) by Polygon and built decentralized Twitter.
  The project won the shared pool prize by Polygon.
  Check the demo video at https://showcase.ethglobal.com/roadtoweb3/detweet Dapp live at Polygon mainnet https://detweet.surge.sh/

  Smart contract code at https://github.com/jaglinux/de- tweet/blob/master/packages/hardhat/contracts/ YourContract.sol
  Includes governance model to ban users, NFT minting of tweet on chain etc. Dapp uses the Graph protocol to index the smart contract events. https://thegraph.com/hosted-service/subgraph/jaglinux/detweet1
- Web3.py development, Smart contract deployment using Eth Brownie, running geth node
- https://github.com/jaglinux/smart_contracts on Remix IDE, interaction with metamak and testing on various Ethereum tests and main net.
- https://github.com/jaglinux/rarity_army_adventure
- Building army on top of rarity game by Andre Cronje on Fantom Network. Task is to create army of all summoners and use it to adventure in a group.
- Building options(call) on NFT, usage of keepers for keyless transactions.
- Active interest in Ethereum L2 solutions, MEV, Defi and various other smart contract and blockchain concepts (through podcasts, twitter threads etc)
- Deploying Upgradeable contracts using OpenZeppelin Transparent and UUPS Proxy.

Personal projects
- Developed a mobile application called FACETool for Samsung BADA platform. The application had received 100000 downloads. FACETool is an image application based on Face recognition.

Education/Degree
- MS (Embedded System)   2007
  Manipal Centre for Information Science / Manipal University, India

- B.E (Electricals and Electronics)   2005
  Visvesvaraya Technological University, Bangalore India