Cloud Computing and SaaS Overview
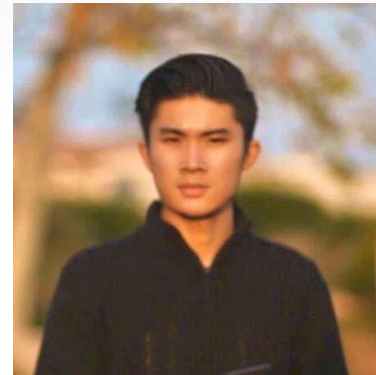
HELLO!

I am Ariful "Ari" Rigan

- 3rd year EECS major
- Interned in software, aerospace, and IoT industries
- Interests: cloud, security, dance, guitar
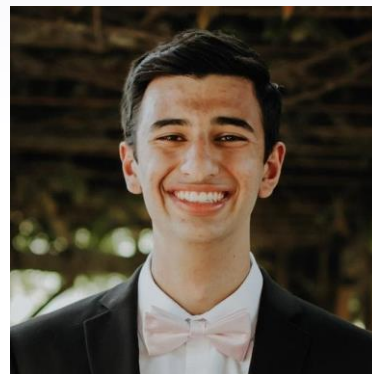
HELLO!

I am Shane Fan

- 4th year CS+English major
- Experienced in managing startups
- Interests: startups, rock climbing, piano, chess

HELLO!

I am Cyrus Bugwadia

- 2nd year CS major

- Former intern at Cisco, CS61A/B Lab Assistant

- Interests: watching sports, cooking, Piazza
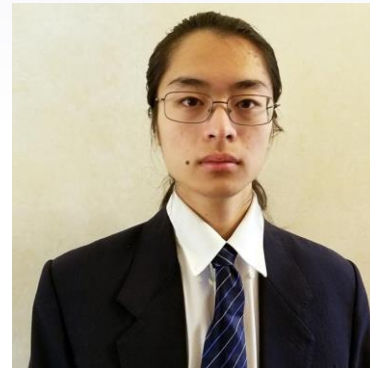
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HELLO!

I am Sumer Kohli

- 3rd year EECS major

- Lots of cloud development experience from previous internships

- Interests: cloud, security, systems, distributed programming, side projects

HELLO!

I am Jie Luo

- 4th year CS major
- Former intern at Paypal
- Interests: video games, TV

HELLO!

I am Rachel Wang

- 4th year CS major

- Former Intern at Amazon, sold my own startup

- Interests: meeting new people, dance, poker, chess, TV

HELLO!

I am Ryan Searcy

- 4th year EECS major

- 5-time 61C TA

- Interests: dancing, cooking, making cocktails

HELLO!

I am Smit Rajyaguru

- 3rd Year MechE Student, EECS Minor
- Former intern at Space Vector
- Interests: video games, image editing, 3D modeling

HELLO!

I am Vanshaj Singhania

- 2nd year CS+Data Science major
- CS61A Tutor
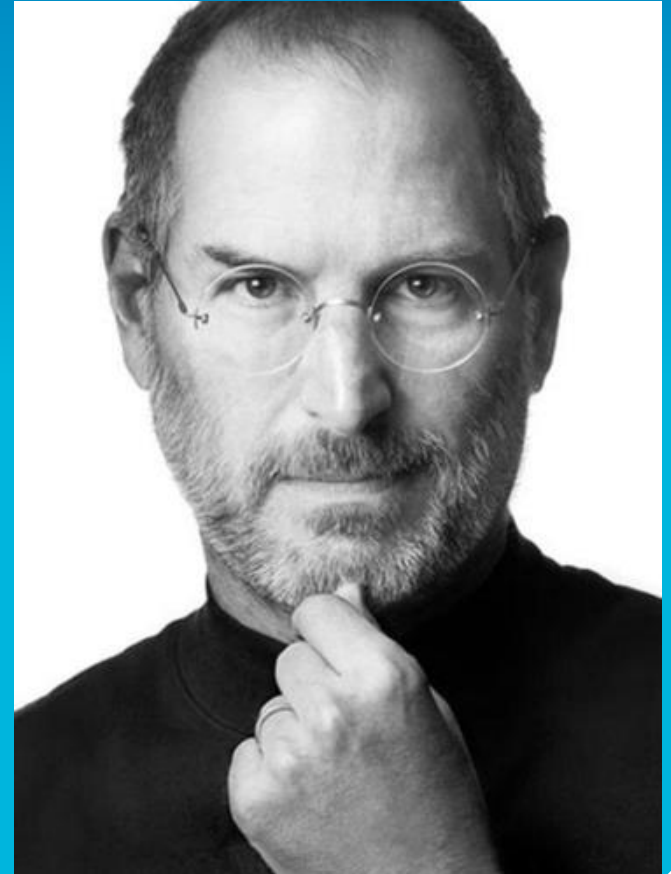- Interests: flight simulators!

What is Cloud Computing?

- ▸ "Just someone else's computer"
- ▸ On-demand availability of computing resources
- ▸ Physical resources are automatically managed

"I don't need a hard disk in my computer if I can get to the server faster... carrying around these non-connected computers is byzantine by comparison."

~ Steve Jobs, Co-founder, CEO and Chairman of Apple Inc.

Benefits of Cloud Computing

- ▸ Abstraction over anything related to physical hardware!
- ▸ Cost
- ▸ Regional Availability
- ▸ Performance/Maintenance
- ▸ Reliability, Backups, Recovery

Types of Cloud Services

- Infrastructure as a Service (IaaS)

- Platform as a Service (PaaS)

- Serverless Computing

- Software as a Service (SaaS)

Infrastructure as a Service

Data Centers

Servers and Storage

Firewalls and Security

Infrastructure as a Service

- Easy to scale up/down required Resources
- Eliminates server purchase/maintenance expenses
  - Pay for what you use
- Reliability
  - Software doesn't break during a power outage
- Security
  - Generally better and more reliable

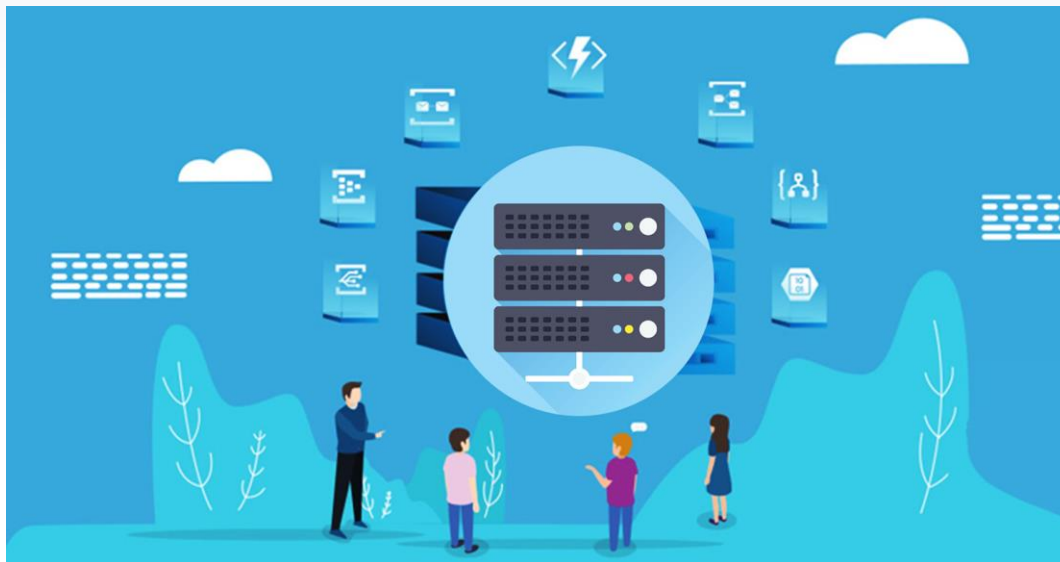16

Platform as a Service

Operating Systems

Dev Tools

Platform as a Service

- Cut down development time

- Develop for multiple platforms

- Tools are more affordable

  - Pay for access

- Spend less time on software maintenance

Serverless Computing

Functions as a Service

Serverless Computing
Functions as a Service

Serverless Computing

Functions as a Service

- ▶ Dynamic Scalability
    - ▹ Automatically-provisioned resources
- ▶ No server/infrastructure infrastructure management
- ▶ Serverless Functions
    - ▹ AWS Lambda
- ▶ Serverless Environments

Software as a Service

Applications?

- Store, backup, recover files
  - Google Drive, iCloud, Dropbox
- Analyze Data
  - Machine Learning/Artificial Intelligence
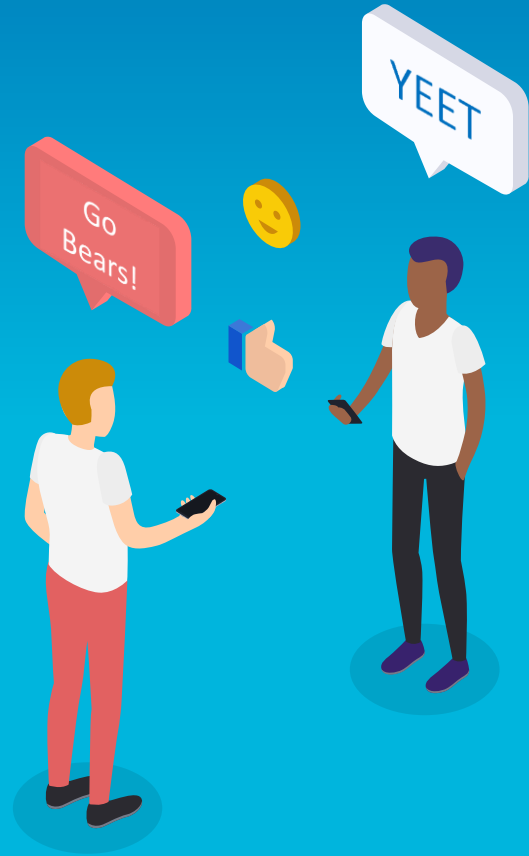- Create cloud-native applications(!!)

1 BearChat

BearChat

- ▸ Social Media Platform
- ▸ Profiles
- ▸ Posts
- ▸ Friends

BearChat

- Fully functional Social Media Platform
  - Focus on backend, frontend provided
- View public/friends' post
- Add/Remove Friends
- Create + Edit Profiles

Overview