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FaaS: The future of computing?

- A powerful abstraction of computing resources
  - Rapidly being adopted for event-based systems
    - Proven beneficial for scalable websites/IoT use cases
  - Facilitates reproducibility and sharing of codes
    - Significant for scientific use cases

- **Predictions:**
- It will be applied to general purpose computing applications
  - 5 min exec/memory limitations etc. are arbitrary and will be expanded as demand grows
- Edge-based FaaS adoption will grow: OpenWhisk/AWS GreenGrass
- Leadership devices will expose FaaS platforms
- Serverless computing will supplant VM provisioning (EC2 etc.)
- The way all scalable programming will eventually be performed

Research Topics

- Apply to parallel programming (e.g., Jonas et al. proposed PyWren)
  - PyWren uses Lambdas to perform Map functions
  - The Lambda loads a pickled applications and executes it
- Batch submission system that dynamically wrap codes into lambdas, or uses cloud pickle like PyWren
  - Streamlining the creation of functions
- Enable a “cloud button” for notebooks etc. that deploys them as functions
- Analysis portals backed completely by FaaS execution