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