Kenneth Emeka Odoh

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Work Experience

March 2022 - now **Author / Research Engineer**

Working on a new book titled “Distributed Computing from First Principles”. For more information, (https://kenluck2001.github.io/blog_post/authoring_a_new_book_on_distributed_computing.html).

- Published several solo-authored paper at WWW conference on privacy-enhancing technology.
- Served as a reviewer at prestigious conferences (ICLR, WWW, PoPETS, and ICML) and judged multiple science fairs.
- Active member on Internet Engineering Task Force committee for creating privacy standards.

Nov 2020 – March 2023 **Microsoft Corporation**, Vancouver, Canada, Software Engineer

Worked on large-scale distributed infrastructure for shipping end-to-end video streaming experiences. Built a number of large-scale projects from POC to full-fledged applications serving billions of users (Yammer, LPC, Microsoft Teams).

- Took pivotal roles in crafting architectural design (RFCs), implementation, to deploying software modules in production and subsequent shipping multiple (features) products in Yammer, LPC, Microsoft Teams, audio description, and Video streaming.
- Led the development of microservices for audio description project.
- Pioneered the video integration effort in video integration in Live Profile Card.
- Orchestrated the development of autoscaling infrastructure for video transcoding.
- Fixed a set of concurrency bugs with significant positive impact across some reliability metric
- Created multiple features to support faster video streaming via hardware acceleration and added support for multi-bitrate Streaming (HLS, DASH) in audio description project.
- Developed excellent skills in navigating and debugging large undocumented codebases, and triaging large scale problems across multiple clusters by analyzing telemetry, alerting, and monitoring.
- Demonstrated a smart browser-based mechanism for reducing latency by 50% in video playback with minimal memory footprint.
- Authored multiple architectural design documents. Mentored (interviewed) interns, junior Software Engineers, and performed code reviews.
- Taught several technical training (React, Redux, Authentication, Authorization, Distributed Systems).
  Technologies: JavaScript, C#

March 2019 – Nov 2020 **Intel Corporation**, Vancouver, Canada, Software Engineer (Contract)

Contributed source codes to internal tools for SSDs and Far memory drives. Successfully implemented and shipped the telemetry features for far memory devices with full test suite

- Wrote a fix in the recovery automation script (bring up) that increased reliability from 80% to 95%.
- Collaborated in the overall redesign and implementation of a new test automation framework, which resulted in smaller maintenance cost. My accomplishments: built a high performant PDU (with failure analysis module) unit using parallel programming techniques resulting in **10x** speedup in comparison to existing module, created a robust telemetry/logging of critical events, and investigated (fixed) bugs in firmware’s task force team.
- Attained a deep knowledge of the NVMe protocol (1.3 & 1.4) for telemetry on SSD drives by implementing a series of comprehensive test suites. This task involved using code injection techniques to create complex scenarios in the SSD resulting in higher test coverage (> 90%).
- Taught a number of technical training (debugging, metamorphic testing, git, solving concurrency issues, design patterns).
  Technologies: Python, C++

March 2017 – April 2018 **Apivio Systems / Nuri Telecoms**, Vancouver, Canada, Software Engineer

The firm provides Internet VOIP phones and smart metering solutions for utility companies.

- Built an automated test framework for unit testing, integration testing, and acceptance testing using Jenkins.
- Successfully reverse engineered the legacy code for IoT and embedded projects and figured the architectural design and proceeded to document my findings to help future engineers.
- Improved the code for over-the-air updates mechanism for phones.

Technologies: Python, C++, Java, SQL

August 2016 – June 2017 **QGS Technologies**, Toronto, Canada, Data Scientist (Co-founder)

Pioneered an early-stage start-up that combines artificial intelligence to predict the risk exposure of financial portfolios.

- Created and maintained a number of closed-source projects including a machine learning pipeline, advanced time series analysis, and serving content over a streaming RESTful API using Flask.
- Developed a proprietary deep learning for event detection, text mining, time series analysis (open sourced PySmooth) in an easy to deploy models over flask and made it easy to benchmark for future iterative improvements. Technologies: Python, C++, SQL

Sept 2013 – June 2016 **University of Regina**, Saskatchewan, Canada, Graduate Research & Teaching Assistant

- Built a number of interactive dashboards to support information seeking activities and successfully led a
- code optimization effort that effectively reduced latency time in a large-scale dashboard.
- Developed a real-time streaming for online breaking news detection using statistical models.
- Performed a comprehensive market survey as regards to cloud computing for ISM Canada.
- Organized a number of laboratory sessions for Digital system architecture, programming in C++, and web programming classes.

Technologies: PHP, C++, JavaScript (d3.js), SQL

Education

2013−2016 University of Regina, **Master's Degree in Computer Science**, Saskatchewan, Canada

2012–2013 University of Helsinki, **Specialization studies in Computer Science** (Algorithms and Machine Learning), Helsinki, Finland

Open-Source Contributions

Made significant contributions to the following popular open-source projects: **FluidFramework** (https://github.com/microsoft/FluidFramework), **Sympy** (https://github.com/sympy), **numpy-ml** (https://github.com/ddbourgin/numpy-ml), **Video.js** (https://github.com/videojs), and **scipy** (https://github.com/scipy/scipy) and other projects (https://kenluck2001.github.io/projects.html).

Community Participation

Technical Blog: https://kenluck2001.github.io/blogs/1 | **Invited Talks**: https://kenluck2001.github.io/publications#talks

Between 2017 and 2021, I organized meetups about AI, Cryptography, and Distributed Systems in Vancouver, Canada. Responsible for organizing the Applied Cryptography Meetup which was based on the book titled "A Graduate Course in Applied Cryptography" by Dan Boneh and Victor Shoup for one year. Also, successfully led the Reliable and Distributed Systems meetup.

Awards and Honors

2022 Honorary mention in CTF challenge @Microsoft

2014 & 2015 Multiple awards of Graduate Research Scholarships