Praveen Kumar Pendyala

In pursuit of building clean, efficient & accessible tools to help everyone acheive more

Information

http://pkp.io
github/praveendath92

Contact

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Skills

Programming

Java, Kotlin, Python, C++, JavaScript

Android

Architecture Components, Proguard, Dex, Material design, Life-cycle, CameraX, OpenGL ES, Native code using C++, Benchmark, Profiler

Build tools

Gradle, Maven, Jenkins, Azure, Google App Engine

Testing

Unit testing, Automated UI testing, Smoke testing, AB testing, Experimentation, Performance bechmarking, Memory leak testing

MOOCs

Machine Learning (grade: 97.3%)

Algorithms: Design and Analysis, Part 1 (grade: 95.6%)

Education

2014–2016	**Masters,** Distributed Software Systems	Technische Universität Darmstadt

GPA of 3.9 out of 4.0 – converted from 1.55 in German grading.

2010–2014	**Bachelors,** Electrical Engineering	Indian Institute of Technology Bombay

Experience

2017-now — Microsoft London, SwiftKey team — Software Engineer

Proposed and implemented a custom file format for SwiftKey Puppets that is 45x faster & 4x smaller than the standard 3D format (FBX), and 800x faster & 18x smaller than the existing format in use. Took full ownership in developing the file schema, a convertor to transform 3D assets from standard format, and a file loader to read data structures from the custom format.

Primary contributor to the Puppets Android Rendering Engine built in C++ using OpenGL ES APIs. Implemented the Phong lighting model for Ambient and Directional lights. Rearchitectured the whole code to make it unit testable, integrated Google test framework and added over 70 unit tests. The engine is capable of rendering over 200 FPS on very high end devices.

Contributed to the App size reduction of SwiftKey. Implemented coach-marks & banners to highlight the custom themes feature. Developed a new internal tool to test keyboard performance in rapid typing scenarios, capable of detecting regressions with precision of 2 ms.

2014–2017 — Center for Advanced Security Research Darmstadt — Research assistant

Contributed to projects in Cloud security, Anonymous voice communications, and Analysis of attacks on Android. Co-authored 3 papers published in top tier conferences.

05–08 2014 — Google Summer of Code — Android Developer & Linux Kernel Programmer

Developed kernel display drivers for accessing the GUI of a Linux device on Android over USB interface. Improved the frame rate from an initial 10fps to 25fps by employing partial updates for only modified areas of UI and by implementing Run-length Encoding for loss-less, inline compression of image updates.

Awards, Publications & Talks

Tech-talk — Android App size reduction — Londroid 2019. Hosted by Facebook London

Presented about my work on Proguard optimizations, R8 compiler and Install size investigation that contributed to reducing SwiftKey's download size by 50% – from 27.6 MB to 14.3 MB, and install size by 40% – from 81.5 MB to 48 MB

Publication — Phonion: Practical Protection of Metadata in Telephony Networks

Proceedings on Privacy Enhancing Technologies (PoPETs) 2017.

Award — Received 20,000 euro prize money at CeBIT 2016, Hannover

Winners of MAPPING – Managing Alternatives for Privacy, Property and Internet Governance, app competition.

Publication — DroidAuditor: Forensic Analysis of Application-Layer Privilege Escalation Attacks on Android

Financial Cryptography and Data Security Conference 2016.