Allan Deutsch

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Objective

Seeking high impact Fall 2017 internship at Uber ATG as a Technical Program/Product Manager or Software Engineer.

Highlights

- Software engineer lead and project manager for Sand Garden, a literal sandbox game showcased at PAX West 16 and alt.ctrl.GDC.
- Independent studying high performance computing and proposing a high-performance container to C++ committee.
- DigiPen BSCS student graduating Dec 2017 who has held 6 CS and Game TA/tutor positions.
- Software Engineer intern at Microsoft in Summer 2016, returning as a Program Manager intern in Summer 2017.

Skills

Languages	Platforms	Software	Fundamentals	Methodologies
C++	Windows	Visual Studio	Performance	Agile
C	Linux	Pix Profiler	Data Structures	Scrum
C# (familiar)	Xbox One (familiar)	Perforce	Parallelism	Waterfall
JavaScript (familiar)		Git	Architecture	Kanban (familiar)

Professional Experience

Program Manager Intern   **Starting May 2017**
Microsoft Xbox Platform

Software Engineer Intern   **May 2016 – Aug 2016**
Microsoft Studios Global Publishing | *ReCore*
- Reduced average AI runtime .3ms (60%) by greatly improving cache utilization in the animation hot path.
- Improved enemy spawn performance over 300% by optimizing based on observations of the data involved.
- Prevented performance regression by creating an automated AI profiling level.
- Collaborated with designers to resolve progression-blocking design issues in gameplay.

Selected Projects

Development Manager   **Sep 2016 – Current**
***Djinnside Out* | Pseudo 3D Action Puzzle-Fighter**   **8 team members**
- Oversee the architecture and implementation of the game engine, as well as overall design direction for the game itself.
- Analyze tradeoffs of design decisions for technical debt and functionality to maintain the code base quality.
- Established good development practices such as code reviews to minimize technical debt and improve developer productivity.

Software Engineer Lead, Project Manager   **Sep 2015 – Current**
***Sand Garden* | *"It's pretty cool!"* – Bill Gates**   **16 team members**
- 🏆 Finalist in alt.ctrl.GDC 2017.
- 🏆 Selected by DigiPen faculty to be a school showcase title for PAX West 2016.
- Developed an efficient ECS game engine in C++ which powered a large, constantly changing world at a consistent 60+ FPS.
- Improved iteration times by implementing code generation and multi-threaded asset hot-reloading.
- Empowered designers to make informed decisions by building a telemetry system and integrating with gameanalytics.com.
- Managed the team and project using Agile methodologies to adapt to moving goalposts during development
- Delivered monthly milestone progress presentations to 4 project stakeholders.

Project Management Consultant   **Sep 2015 – Apr 2016**
***Rebound* | 2D Action Puzzle-Platformer**   **10 team members**
- Mentored the developers working on the game engine to ensure they built a solid tech foundation for the game.
- Maintained open lines of communication between a team with diverse specialties.
- Organized the project schedule by tracking weekly and milestone tasks.
- Guided the team through creating and developing a unified vision of what the product should be.

Software Engineer Lead, Project Manager   Sep 2014 – Apr 2015
Breakfast Apocalypse | 2D Breakfast-Themed Roguelike   10 team members
🏆 DigiPen submission for IGF and IndieCade competitions.
• Implemented profiling tools which led to a 500% increase in game performance, resulting in a smooth runtime.
• Shipped the project 5 weeks early by planning and scheduling effectively and accurately anticipating upcoming challenges.
• Created the game engine for the project from scratch in modern C++.
• Handled large game design/concept changes by architecting the code to be robust and reusable.
• Increased physics development speed by implementing debug drawing functionality.

Software Engineer   Jul 2015
Behavior Tree Framework | Research Project   3 team members
• Emphasized programmer friendliness by automatically generating all boilerplate code.
• Crafted the framework for easy integration and it shipped in 3 games and a class project.
• Accelerated designer workflow by providing runtime tree modification and GUI support.

Open Source Projects

Fast Template Library (FTL) | C++ Container Library | github.com/Masstronaut/FTL   Jan 2017 - Current
• Implementing faster version of C++ standard library containers that can be used as drop-in replacements.
• Creating specialized containers which exhibit better performance characteristics for their specific use cases.
• Developing an advanced unit testing system connected to continuous integration to ensure library correctness and stability.

AlJeEngine | Simple C++ Game Engine | github.com/Masstronaut/AlJeEngine   Mar 2015 – Apr 2015
• Created the project for developers interested in game development as a resource for game engine design and development.
• Implemented and fully documented the core engine using modern C++.

Student Work Experience

Parallel Programming (CS 355) TA   Jan 2017 – Current
• Course was waived as a graduation requirement due to exceptional merit.
• Implemented 2 new assignments, a generic thread pool and a system for executing tasks with dependencies in parallel.

Artificial Intelligence in Games (CS 380) TA   Sep 2015 – Apr 2016
• Converted research project from the class into a new behavior tree assignment.
• Assigned the coding project and rubric I developed and assisted students with class projects.

Game Projects Tutor   Sep 2015 – Dec 2015
• Helped students and teams with teamwork, game engine architecture, optimization, and other related topics.

Game Implementation Techniques (CS 230) TA   Jan 2015 – Jul 2015
• Mentored students on topics related to game engine architecture and gameplay programming and graded assignments.

Game Implementation Techniques (CS 529) TA   Sep 2014 – Dec 2015
• Documented an internal game engine used for two classes and by DigiPen R&D.

Game Software Design and Production Student Lecturer   Jan 2015 – Apr 2015
• Designed and implemented a semester long supplementary curriculum to prepare students for making their first game engine.

Related Volunteering

C++ Standards Committee (ongoing): Games and Low Latency Study Group (SG14) member, slot_map proposal author.
Technical Speaking (ongoing): Give detailed technical talks about topics relating to C++ and game engine development.
Technical Interview Practice (ongoing): Host weekly sessions to help students better demonstrate their capabilities in interviews.
IGDA@GDC: Volunteered to help run the IGDA GDC booth in 2015 and 2016.

Education

Bachelor of Science in Computer Science   Expected Graduation Dec 2017
DigiPen Institute of Technology
• Founder and President, Producer Club   Sep 2014 – Current
• Founder and President, C++ Club   Jun 2015 – Current
• President, Game Engine Architecture Club   Oct 2015 – Current