My current position is with Big Fish Games, Inc. working on a legacy casual game for Android and iOS/iPad.

My previous position was with GameCo, LLC in Las Vegas, NV, working as a Senior Platform Engineer (slot machine), until our COVID-19 layoff. After being laid off and looking for work, I worked on a few Code Challenges for fun, to include Swift UI (similar to Android Jetpack/compose framework).

Before that, I was employed for a long time Mac Developer of network sharing products. In the last few years, they have entered into the mobile area with secure access solutions for Mac/iOS/Android, using Smart Card and secure element technology. I worked on iOS and Android products for the 6+ years I was there, delivering iOS and Android solutions, to the marketplace.

Previously to joining Thursby, I was the Manager of Software Development for Hothead Technologies in Dallas, TX.

# SUMMARY OF QUALIFICATIONS

Sr. Project Engineer/Manager experienced in all aspects of the software development process for products ranging from Network applications, PC gaming, Casino Gaming and various embedded and mobile products and wireless biometrics.

- · Interacted with Customers to address Networking issue
- Administered Software Beta testing program
- Provided Text for and consulted on Software User Guides
- · Created Tools for testing Network Protocol stacks
- Attended and worked trade show booths to promote products

Skilled Software Engineer with track record of efficiently and effectively designing, developing and implementing complex software tools.

- · Script language and Game Engine for "Myst" type game development.
- Software tools for DSA verification of Casino games
- · Family of software for "burning", tracking, verifying USB Security Tokens
- · Developed gaming system software for mobile Casio Gaming device

Strong belief in continual self-education studies.

- Utilizes books, magazines and Internet for improving software skills
- · Studies books and tapes to improve knowledge of all aspects of business
- Have participated in non-Engineering positions, such as sales, service, support, etc. which gives me a broader view of the technology business

# **PROFESSIONAL EXPERIENCE**

SHIFT4 PAYMENTS

#### Sr. Software Engineer V, Las Vegas, NV, May 24th, 2021- Present

Hired to work on the Harbortouch/Echo product of the Edgewater product group (Bar and Restaurant POS System). I am working on the Android based POS terminal.

BIG FISH GAMES, INC.

**Sr. Software Engineer**, Las Vegas, NV, March 2021- Present Currently working a contract with a casual game company (Seattle / Remote) to maintain and add features (as needed) to their game Fairway Solitaire for Android and iOS (uses cocos2d engine).

#### GAMECO, LLC

Sr. Platform Engineer, Las Vegas, NV, August 2019- March 2020

Hired to work on platform code for GameCo's slot machines. Working with artists, game designers and game integrators to develop games for various jurisdictions.

Main area of responsibility was to fix bugs, add features and optimize platform code for use with GameCo's skill based games. This codebase was mostly C++ based and utilized MFC, with some comm's piece in C# (Unity plug-in).

Tools included Microsoft Visual Studio 2019, Bitbucket (GIT), Jira and Slack.

THURSBY SOFTWARE SYSTEMS (now wholly owned subsidiary of Identiv, Inc.)

#### Sr. Software Engineer, Arlington, TX, April 2013- August 2019

I worked on the Sub Rosa® (formerly PKard®) line of products and SDK's, for iOS, Android and OSX. Providing maintenance support where needed for legacy products and assisting QA design testing procedures, etc.

My main role was to design the Android version of Sub Rosa, along with one other Engineer.

Designed automated continuous build system for Android apps for delivery to QA.

Sub Rosa® products provide PKI (Public Key Infrastructure) services to Desktop and Mobile devices, using SmartCard authentication (PIV, CAC, etc.) or derived credentials. Some of the products I have worked on are:

Sub Rosa® Pro (iPhone/iPad) Ready-2-Serve (iPhone/iPad) Sub Rosa® (iPhone/iPad) PKard® for Good Technology (iPhone/iPad)

Sub Rosa® Pro (Android) Ready-2-Serve (Android) Sub Rosa® (Android) PKard® for Good Technology (Android)

Tools I have used here, include Xcode (Objective C, C, C++, Swift, Cocoa/Cocoa Touch), MS Visual Studio 2010/2012-2019 (C/C++,C#.NET), Jira, Bitbucket (GIT), Eclipse and Android Studio (Android SDK, Java, Kotlin). While working on the iOS products, I have worked with JSON and XML files as well as JWS (JSON Web Signatures), to deliver policy files to the system via the URL Loader API's.

Our team worked on our native (Java, Kotlin and C/C++) Android implementation of our Sub Rosa software, for Android 5.x and above devices (phones and tablets). As well as maintaining our iOS, Mac and Windows software.

One of the many challenges for our team was to reverse engineer the OWA (Outlook Web App) calls, to provide a native (iOS, Android) front end for Microsoft Exchange. We later switched to the XML based interface that Exchange Server supports.

We were able to accomplish quite a bit, even though our Engineering team was only ~4 people, including our hands on CTO and two QA people.

I spent a lot of time in Xcode and working in C++, Objective-C and Swift code, which I would port to the Android platform (Java, Kotlin). Our application provided 2FA for mobile devices (iOS and Android) using a SmartCard or derived credential.

In addition to the Sub Rosa app, we provided and SDK / API for external developers to take advantage of our middle ware, to talk to Smart-cards, for their own verticals.

#### HOTHEAD TECHNOLOGIES, INC.

#### Manager of Software Development, Dallas, TX, November 2011- November 2012

Recruited to manage the software development requirements for this maker of wireless biometric devices and solutions. Areas of development include Windows Mobile, CE and Desktop, as well as, iOS and other mobile platforms, working in conjunction with wireless biometric devices, for the purposes of providing biometric information, alerts and analysis. I managed the work of our partner teams around the globe, to include the U.S., India and Austria.

I also have done all the design and development for the companies fixed reader units. There are (2) devices. One is Windows CE based and the other is Windows based.

In addition to the fixed reader, I also designed and began work on the iOS app (Objective C) that was to work in conjunction with the company's consumer tag product, which works over BLE (Bluetooth Low Energy). Tools used included Xcode and the included tools (Simulator, FileMerge, Instruments, etc.).

BALLY TECHNOLOGIES, INC.

### Senior Software Engineer, Las Vegas, NV, April 2008- November 2011

Recruited for my experience in Windows programming and experience with Win CE 5.0 embedded development. I worked on Bally's iView platform and evaluated electric sign products for acquisition.

### Senior Software Engineer, Reno, NV, August 2007- April 2008

Recruited for my experience in Windows programming and recent experience with Win CE 5.0 embedded development. Worked on wireless gaming devices for the gaming industry.

- Developed slot game code for video slot games.
  - 0 Classes to handle bitmap, animations, Animate Wins, Reels, etc. using Direct Draw / GDI
  - O Sound Services using WAV functions from Win32 (no DirectSound in CE 5.0)
  - · Developed code to handle keypad input (via GPIO)
- Developed code to communicate with Z8 processor via serial comm.

# MULTIMEDIA GAMES, INC.

### Senior Software Engineer, Plano, TX, May 2006- February 2007

Referred to this company from the owner of '*Custom Game Design*' when my contract was over with *CGD*. At Multimedia Games, I used technologies that include Visual Studio 2005, C#, C++, .NET 2.0, etc.

- Maintained and extended a TCP/IP Windows Service, using C# .NET 2.0 and Visual Studio 2005. Server acted
  as connection to a MS SQL 2000 Server DB.
- Maintained and extended software for a WinCE based device for use in Player tracking / Card Accounting and for serial to Ethernet translation of the SAS (Slot Accounting System) 6.x protocol. Used Embedded C++ 4.0 and Platform Builder for WinCE 5.0.
- Maintained and extended a Load Testing application using C# .NET 2.0, Visual Studio and Win Forms.
- Ported our Load Testing application over as an ASP.NET Web Service, using Visual Studio 2005, .NET 2.0, ASP.NET 2.0, Web Forms and MS ISS for Windows XP and Windows 2003 Server.
- Designed and developed a Windows 2003 based Windows Service. Windows Service used TCP/IP to communicate with MiniQRK (Quick Recharge Kiosk) devices (WinCE 5.0 based) and acted as a proxy type service to the backend server, using an SSL encapsulated XML based protocol. Developed using Visual Studio 2005, .NET 2.0,

# CUSTOM GAME DESIGN, INC.

### Senior Software Engineer, Richardson, TX, August 2005 - March 2006

At CGD I develop games for the SDG/Bally's AGP (Alpha Game Platform). This is the same type of development as I did for SDG, but now working as a 3<sup>rd</sup> party developer through CGD.

In addition to game development, I was also responsible for the following:

- Designing or acquiring audio assets
- Assisting Graphics department in game graphic design
- Training other Engineers at associative companies on the Bally AGP (Alpha Game Platform)

# SIERRA DESIGN GROUP INC. / BALLY GAMING INC.

# Senior Project Engineer, Reno, NV, June 2003 - March 2005

Develop games for a Linux based embedded game platform, for various jurisdictions.

Developing Linux based games for the gaming industry (Casino Gaming) using proprietary game platform. Tools include GNU C++ compiler, linker, make, shell scripts, etc. on Intel Platform.

# INTERNATIONAL GAME TECHNOLOGY, INC.

# Senior Project Engineer, Reno, NV, April 1997 - June 2003

Design, develop, implement and coordinate with other teams on complex software tools for the Casino gaming industry.

- DSA Authentication and USB Token Access development for Advance Video Gaming Platform
- Resource packager development environment for game development

Initially hired to work on embedded Windows platform, to develop a multimedia bonus display unit to be used with standard stepper slots. Worked on system development, game development and tools for insuring integrity using DSA key verification.

Later worked on Win32 to develop tools for resource management/creation and network based tools for signing/creating game code images, USB Security Tokens, etc.

Tools used include various versions of Visual C/C++.

# JONES & JONES MULTIMEDIA, LLC / 911 ENTERTAINMENT, INC.

#### Senior Software Engineer, Fremont, CA, June 1995- April 1997

Designed, developed, implemented and later extended, at 911 Entertainment, a script driven game engine and script compiler.

- · Script compiler to turn script language into "byte" code, similar to how a Java compiler works.
- · Game engine to run game script to display Graphics, play audio and accept user input, etc.

Developed a Windows based (and later Mac based) game engine to create script driven "Myst" type interactive games.

Tools used include various versions of Visual C/C++ and Symantec C/C++ for Mac.

SOFTWARE ALLIANCE, INC.

Software Project Lead, Berkeley, CA, June 1994 - June 1995

Designed, developed and implemented software API for large imaging software system and wrote additional drivers for SCSI based high-speed scanners and large format optical disc jukebox devices.

API provided access via "C/C++" or Visual Basic, for customization of system

Tools used include various versions of Visual C/C++ and Visual Basic.

ORCHID TECHNOLOGY, INC.

**Software Engineer / SQA Engineer**, Fremont, CA, June 1993 - June 1994 Initially, tested video card drivers and provided benchmarking reports, as a contractor, then was employed full time as a Software Engineer to write utility software for Video Cards.

Also worked on configuration software for video capture cards.

FARALLON COMPUTING, INC.

Quality Assurance Engineer, Emeryville, CA and Alameda, CA, June 1992 - June 1993 Designed and used software to test networking products for Windows PC's to connect to Macintosh computers.

Did extensive protocol testing on Windows version of AppleTalk, by writing test tools to verify functionality of protocol API.

# **OTHER EXPERIENCE**

FARALLON COMPUTING, INC. Technical Support / Product Specialist

THE COMPUTER FACTORY Service Manager

COMPUTERLAND Sales Representative

TANDY CORPORATION Sales Representative