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Summary of Career

Company	Last Position	Duration	Keywords
Mentor Graphics www.mentor.com	R&D Group Manager	1 yr 11 mos	Management, C++, EDA, Chip Design, I/O
Mentor Graphics www.mentor.com	Lead SW Engineer	5 yrs 9 mos	C++, Database, EDA, Chip Design
Sonics www.sonicsinc.com	Sr. SW Engineer	2 yrs 8 mos	C++, SystemC, Java, EDA, SoC
Samsung Electronics, S. Korea www.samsung.com	Sr. SW Engineer	3 yrs 5 mos	C/C++, Telecom, Mobile, Multimedia, Security
Epygi Labs www.epygi.com	Sr. SW Engineer	5 yrs 11 mos	C/C++, Telecom, VoIP, DSP, Audio Processing, Telephony

Summary of Qualifications

- 19+ years of experience in software R&D and team management
- Hands-on experience in technical leadership and staff supervision
- Proficiency in mentoring individuals to maximize their and overall team's productivity
- Strong experience in areas of EDA, multimedia, mobile, telecom
- Strong experience in embedded systems development of mobile phones and VoIP equipment
- Working experience of product life cycle management and development
- Experience in security software development emphasizing PKI
- Working experience in development of various DSP algorithms for VoIP application
- Graphical User Interface design and programming
- Working experience with development of installation packages
- Strong background in board-level electronics and experience in hardware debugging
- Background in wireless/wired low-level communication engineering
- Collaboration experience with HW engineers in debugging of SW/HW conformance issues
- Extensive experience working in international teams and stressful environments
- Extensive experience in organizing and performing technical interviews
- Excellent communication skills with local and overseas engineering/management staff

Technical skills

Programming Languages	<ul style="list-style-type: none">▪ C++▪ SystemC▪ Java (limited experience)
Scripting Languages (limited experience)	<ul style="list-style-type: none">▪ TCL▪ Python▪ JavaScript▪ InstallShield® Install Script
Libraries	<ul style="list-style-type: none">▪ STL▪ TLM-2.0▪ WMDRM SDK▪ TI CSL for TMS320 platform▪ MFC Library▪ Win32 API
Technologies	<ul style="list-style-type: none">▪ OOP/OOD▪ RCS 1.0▪ Digital Signal Processing▪ MS WMDRM and OMA DRM 2.1
Awareness of Network Protocols	<ul style="list-style-type: none">▪ TCP/IP, UDP▪ SIP/SDP▪ RTP/RTCP
Development Tools	<ul style="list-style-type: none">▪ Eclipse▪ MS Visual Studio▪ Cadence SimVision▪ Source Insight▪ TI Code Composer Studio▪ InstallShield DevStudio▪ MATLAB Simulink
Debugging Tools	<ul style="list-style-type: none">▪ GDB/DDD▪ TotalView▪ Visual Studio debugger
Code Quality Control	<ul style="list-style-type: none">▪ CodeSonar static analysis tool▪ ASAN: address sanitizer▪ LSAN: leak sanitizer▪ TSAN: thread sanitizer▪ Valgrind's Callgrind▪ Valgrind's Helgrind
Source Control Systems	<ul style="list-style-type: none">▪ Git▪ CVS▪ AccuRev▪ Perforce▪ MS Visual Source Safe
Bug Tracking Tools	<ul style="list-style-type: none">▪ JIRA Issue & Bug Tracker▪ Bugzilla▪ Mantis Bug Tracker
Operating Systems and S/W Platforms	<ul style="list-style-type: none">▪ Linux▪ Windows▪ Samsung SHP and MMI Platforms▪ TI-RTOS for DSP

Job Experience

Mentor Graphics Development Services CJSC, Armenia

DID Nitro R&D

www.mentor.com

Jan 2019 – Nov 2020

Position: R&D Group Manager

Performed technical leading and supervision of Nitro-SoC™ IO team

Performed project planning, distribution and technical supervision

Organized and coordinated the following team activities:

- Elimination of inter-project dependencies in Verilog Reader/Writer/ECO modules for DARPA
- Redesign of Verilog reader to be able to accommodate an external parser
- Analysis and improvement of Verilog/LEF/DEF reader/writer user interface
- Internal inconsistency elimination between Verilog and DEF modules
- Significant performance improvement of Verilog reader
- Support of InRoute – Calibre® project (DRC)
- Code quality improvement using CodeSonar, ASAN, LSAN and TSAN
- Bug fixes and enhancements of Verilog/LEF/DEF/InRoute projects

Performed team members' C++ source code review before every check-in

Organized software engineers hiring process, which include:

- Monitoring and selection of CVs, performing phone pre-screening of candidates
- Organizing and participation in technical face-to-face interviews

Job Experience

Mentor Graphics Development Services CJSC, Armenia

Place & Route Division

www.mentor.com

May 2013 – Jan 2019

Position: Lead Software Engineer

Worked on Olympus-SoC™ software database development

- Did enhancements and bug fixes of Olympus Verilog reader and writer
- Redesigned ECO (Engineering Change Order) functionality of Verilog reader
- Did excessive work on 32-layer metal stack enablement project to get TSMC certification
- Fixed a lot of bugs related to Olympus database and serialization

Job Experience

Sonics, Inc., Armenia

Software Development Team

www.sonicsinc.com

Sep 2010 – April 2013

Position: Senior Software Engineer

Worked on StudioXE GUI development environment

Added new functionalities to the Eclipse RCP based development environment – StudioXE

- Implemented Editor commands for different Sonics IPs, like Copy/Cut-Paste, Undo/Redo
- Performed Java code optimization, bug fixing and maintenance

Worked on Sonics Gigahertz Network (SGN) project

Added new features to System on Chip (SoC) Router SystemC model

- Implemented system-level model and created regression tests using SystemC / TLM 2.0
- Automated verification of SGN system-level model using Python
- Performed SGN fabric model simulation analysis using AXI protocol transactors
- Implemented Payload Event Queue on HW protocol sockets to avoid racing on clock edges
- Implemented 4-level QoS arbitration model for SGN Router
- Performed C++/SystemC code optimization and bug fixing of SGN Router

Job Experience

Samsung Electronics, South Korea

Digital Media and Communications division, Europe R&D

www.samsung.com

Oct 2006 – Feb 2010

Position: Senior Software Engineer / Manager (Mar 2009 – Feb 2010)

Worked on Samsung mobile phone IMS applications for 3G models

- Investigated IMS concepts, made seminars for team members about SIP/SDP and RTP/RTCP protocols, organized discussions about IMS and IMS-related software development
- Managed team activities and development for RCS project, planned schedules and deadlines according to European operators (Orange, SFR, Vodafone, Telecom Italia, Bouygues, Deutsche Telekom) demands
- Managed and coordinated RCS development of SISO (Samsung Electronics India Software Operations) engineers to meet Video Sharing, Image Sharing, File Sharing, Presence, Enhanced Address Book requirements
- Organized IMS-related feature discussions of 3G models with development departments in Korea, India and Poland
- Periodically negotiated with different European mobile operator representatives in order to deliver 3G handset feature requirements to development teams
- Managed and maintained source code flow and performed code merges
- During a business trip to Poland, supported and coordinated RCS developers in Samsung Poland R&D Center, organized communication between HQ and different departments, also helped coding some modules related to RCS User Interface for S8000 model

Position: Software Engineer / Assistant Manager (Oct 2006 – Mar 2009)

Worked on Samsung mobile phone applications for 2.5G and 3G models

- Implemented WMDRM features for High-Tier 2.5G mobile phone products
- Implemented WMDRM GUI in accordance with mobile GUI standards of Samsung
- Performed WMDRM and Music Player bug fixing and enhancements
- Developed Device Authorization Certificate automatic integration tool with handset source codes
- Managed Device Authorization Certificate (DAC) acquisition from Microsoft
- Managed quality certifications acquisition for 2.5G mobile phone models, including MS PlaysForSure™, Real Rhapsody™, Napster™ and Yahoo® certifications
- Provided technical trainings for new team members on subject of WMDRM testing
- Performed bug fixing and support of 2.5G WMDRM-enabled models
- Suggested and implemented architectural optimization of relations between OMA DRM, WMDRM and Music Player in order to achieve more simple and common UI for DRM and to eliminate source code redundancies
- Suggested and implemented new signaling communication interface between baseband and multimedia chips
- Periodically had technical discussions with multimedia chip provider companies (Agere Systems, Qualcomm, Mtec-Vision, CoreLogic, Discretix, Microsoft, Infineon)
- Took part in ISMACryp and OMA DRM v2.1 integration with existing 3G high-tier models
- Ported IMS Video Share functionality from A777 USA base model to M7500 European model
- Developed target model specific UI and resources for RCS project
- Developed logging and configuration tool for S8000 model
- Integrated third-party face detection framework with S6700 model
- Received management and organizational training at Samsung Training Center, Yongin city, South Korea

Job Experience

Epygi Technologies LLC, Armenia

S/W Development Department
www.epygi.com

Dec 2000 – Oct 2006

Position: Senior Software Engineer (Jan 2004 – Oct 2006)

Worked on Quadro™ IP PBX/Gateway project

Developed real-time software for TI TMS320 C67xx DSP for VoIP embedded system:

- Designed and implemented Voice Activity Detection and Comfort Noise Generation algorithms
- Took part in development of echo cancellation, DTMF signal generation/detection algorithms
- Developed high speed cross-platform data communication technique between DSP and Host
- Implemented low-level connectivity for E1/T1 and ISDN protocols
- Participated in S/W solutions of complex H/W-related issues (timeslot shifting, voice corruption)

Position: Software Engineer (Dec 2000 – Jan 2004)

Worked on Quadro™ IP PBX/Gateway project

Developed real-time software for TI TMS320 C67xx DSP for VoIP embedded system:

- Optimized DSP task scheduling algorithm, wrote new DSP-Host signaling API
- Implemented detailed statistics calculation of DSP load and logging from host side
- Designed, implemented and maintained solution to automate DSP code testing procedure
- Took part in WEB-based configuration GUI development on CGI

Worked on Spectra2 VoIP network testing software project

- Developed and maintained setup program of SW package comprising 50 projects
- Automated projects build and product installation, source code synchronization

Educational Background

Yerevan State University, Armenia

Faculty of Radiophysics
Department of Microwave Radiophysics and Telecommunications

1995 – 2004

Major: "Telecommunication networks, devices and systems"

Doctor of Engineering Degree has been awarded in December, 2004

Spoken Languages: Armenian, Russian, English, Korean (basic)

Technical Publications

BER Improvement in the Zero-IF Receivers

Proceedings of the CSNDSP-Forth International Symposium, University of Newcastle, UK, July 2004, pp. 71-74

<https://www.nahapetyan.com/publications/CSNDSP2004.pdf>

Quadratic Nonlinearity in Direct Conversion Receivers

Series of Technical Sciences, Proceedings of National Academy of Science of Armenia, Vol. LVII, N2, July 2004, pp. 348-353

https://www.nahapetyan.com/publications/Proceedings_Rus.pdf

BER Improvement in Direct Conversion Receivers

Physics, Proceedings of National Academy of Science of Armenia, Vol.39, N3, May 2004, pp. 195-198

https://www.nahapetyan.com/publications/Physics_Rus.pdf

DC Offset Suppression in Double Balance Direct Conversion Receivers

Proceedings of Ninth International Conference on HF Radio Systems and Techniques, IEE, University of Bath, UK, June 2003, pp. 78-80

<https://www.nahapetyan.com/publications/IEE.pdf>