

# Hristo I. Gueorguiev

HristoGueorguiev.com

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## Summary

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Strong **problem solving**, **analytical skills** and **algorithmic thinking**. **In-depth experience** with **large variety of programming languages**, operating systems and network architectures/protocols. Worked on projects involving both high and low level programming language development. Ability to **perform without direct-supervision** and **take ownership** of process and outcome, **self-train** and a compatible **team player**. **Excellent communication skills**. Fluent in English, Bulgarian, some Croatian and Russian.

## Relevant professional experience

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**Software developer, PolyPhotonics, Rochester, NY** Image sensor technology, instrumentation and software.

Developed full suite of software for a new scientific imaging camera product. Involved in full pipeline of development from prototype to finished product.

- Designed and implemented embedded camera and pc client software packages as well as communication and data transfer protocols.
- Integrated OPENTCP package with a multi-tasking Forth kernel to create a robust, modular and highly configurable operating system environment for embedded camera hardware.
- Optimized and debugged on camera software to ensure faster image sensor data collection and reduced noise.

Tools/Platforms used:

CCD sensor, Freescale mc9s12ne64 microcontroller, Freescale C, HCS12 Asm, OPENTCP TCP/IP stack, Python, Python standard distribution libs, Custom Forth.

**Software developer, Monroe Community College, Rochester, NY**

Worked alongside with George Fazekas, Professor of Computer Science, in the development of a digital camera prototype to be used in MCC signal processing class curriculum.

- Design and implementation of on camera control, sensor data collection and network transfer software in Dynamic C and inline z80 assembly.
- Optimizing data collection routines in assembly, including techniques as self modifying code to reduce collection time from sensor to reduce noise accumulation.
- Developing camera client in both LabView and Java to facilitate cross platform use and increase code legibility for use as teaching aid.

Tools/Platforms used:

CCD image sensor, Rabbit Microcontroller, z80 Asm, Dynamic C, Java, LabView.

**Software developer, Finger Lakes Instrumentation, Lima, NY** Astrophotography, science imaging solutions.

Extended and updated the FLI software suite.

- Implemented control modules for FLI software suite to go along with new and existing imaging equipment peripherals.
- Assisted with embedded software development on Pic microcontrollers for new product development.

Tools/Platforms used:

Microsoft Visual Studio

**Freelance software developer, Hollywood Movie Rental, Sofia, Bulgaria** Small scale video rental chain in Sofia, Bulgaria.

Designed and implemented a custom database system for video rental logistics.

- Frontend and interface with ease of use and ability to run smoothly on older hardware in mind.
- Data Structures for catalog, inventory and member management to facilitate consistent record keeping and streamline video rental logistics.
- File structure for data storage, retrieval and archival.

Tools/Platforms used:

Borland Turbo Pascal, standard libraries

**MCC CSC214 Signal Processing For Astrophotography, Winter 2018**

Sat in on signal processing class led by D. Venable and developed a CCD digital camera for astrophotography alongside the instructor and students. Assisted with embedded development and mentoring students in low level software programming. Participated with ideas for mechanical shutter design, team management, helped debug software, hardware and device communication issues. As well as taking the opportunity to learn from Prof. Venable on electronics, optics and astronomy thanks to his depth of experience and many years in industry.

**Financial asset trading expert system example in Prolog, application of formal logic to asset trading decision making**

Simple asset trading expert system skeletal framework implemented in SWI Prolog, asset selling decisions for a portfolio are based on predefined strategies, which in turn are composed of sets of tactics, each tactic in turn composed of sets of logic rules.

**Twitter data-miner and data analysis in Python, key term trend and sentiment analytics**

Data-miner and analysis for Twitter implemented in Python. Data is collected based on a defined search query, it is then organized in time series by selected period size. Linear regression is used to obtain direction of trend and natural language processing used to obtain suggested emotional sentiment per tweet, then averaged by time period. Hashtags related to search query are extracted as well.

**Technical skills**

**Languages:** C, C++, Python, Java/JavaScript, Perl, Pascal, Fig - Forth, MS Visual Basic, ( 80x86, Z80/180 and 68HC12 ) Assembly language, Dos/Bash etc shell script, LabView, HTML/HTML5, CSS, PHP, SQL.

**Platforms:** MC9S12 and Rabbit Family embedded microcontrollers, MS Windows, Linux, \*NIX, IBM OS/2, DEC VAX/VMS, Plan 9, BeOS, MS DOS, Novell DOS/Novell OS.

**Tools:** Variety of Compilers, Debug tools, IDEs, Adobe Flash, FireBug, WordPress, MS Office Suite, Open Office Suite, Google Docs, Adobe Photoshop, Adobe Illustrator, Adobe Premier Pro, Adobe After Effects, Network Technology, other applications and script languages

**Employment history****Independent contractor, Rochester, NY (Present)**

Paint and drywall, focused on high-end, specialty finishes and historic restoration.

**PolyPhotonics, Rochester, NY (8/04-11/08 | 5/18 - Present)**

Software developer

**Exe Productions, Rochester, NY (8/03-2/09)**

Website design, script language programming, SEO/SEO Automation. Utilizing HTML, Perl, Php.

**Monroe Community College, Rochester, NY (6/02-8/02)**

Software developer

**Finger Lakes Instrumentation, Lima, NY (6/02-8/02)**

Software developer

**Monroe Community College, Rochester, NY (1/99 - 6/00)**

Department of Instructional Technology/Distance Learning.

**Tourist Information and Reservation,****Sofia, Bulgaria (6/97 - 8/97)**

IT System administration, Network administration

**Hollywood Movie Rental, Sofia, Bulgaria (5/97 - 7/97)**

Freelance software developer

**Education**

**Monroe Community College, Rochester, NY** Associate of Science, 90% Completed Computer Science

\* Expected graduation Winter '19

**Greece Arcadia H.S., Greece, NY** Graduated with Distinction, 1998 Foreign Exchange Student Program

**151 S.O.U.P.I H.S., Sofia Bulgaria\*** 4 year technical degree, 1992-1997 Computer Technology

\*151 S.O.U.P.I H.S. is an accelerated educational institution majoring in the field of Computer Technology

**Hobbies**

Health/Fitness, Econ/Finance, Philosophy, Reading, Programming & computer related tinkering.