

## Abhay Narayan Singh

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### Career Objective

Results-driven Software Developer with over **12+ years of experience in C, C++, Linux-based development, and embedded systems**. Seeking an opportunity to apply my expertise in **multi-threading, software optimization**, and scalable solutions to contribute to a forward-thinking organization. Eager to leverage my skills in **high-performance software development and problem-solving** to drive innovation and enhance product functionality.

### Professional Summary

Experienced Software Developer with 12+ years of expertise in **C, C++, multi-threading, and Linux systems**. Specialized in designing and optimizing **scalable software solutions** for industries including **telecommunications, medical devices, and NLP systems**. Proficient in leveraging **STL, socket programming, and embedded systems development** to deliver **high-performance software**. Proven success in **leading teams, managing complex projects**, and improving performance across domains such as **medical, communications, and telecommunications**. Skilled in **cross-compiling toolchains** and using **Buildroot** for **embedded systems development**.

### Technical Skills

- **Languages:** C, C++ (C++11, C++14), OOPS Concepts, Linux Shell Scripting, G-streamer, Qt Framework, QML
- **Tools:** Makefiles, gdb, gcc, Buildroot, crosstool-ng, Git, Vi editor, G-test
- **Operating Systems:** Linux (Ubuntu 20.04 LTS), Windows XP
- **Networking Protocols:** TCP/IP, UDP
- **Job Functions:** Requirement Analysis, Design, Coding, Unit Testing, Documentation
- **Methodologies:** Agile Development, DevOps, Waterfall development

### Professional Experience

Company	Carl Zeiss India Pvt Ltd., Bangalore, India
Position	Solutions Engineer
Project	Ushuaia / PENTERO 800S
Duration	Feb 2023 – Present
Technologies Used	Linux, Qt, QML, C, C++, Multi-threading, STL

### Responsibilities:

- Designed and implemented **new features** for the **PENTERO 800S surgical microscope**, focusing on improving the precision and ease of use in **critical surgeries**.
- Developed software for **video processing units**, ensuring high-definition imaging, real-time processing, and seamless integration with the surgical workflow.
- Worked on the **light source control system**, allowing precise light intensity adjustments for optimal visualization during surgeries, while ensuring safety and performance.

- Responsible for **end-to-end testing**, including writing unit tests using **G-test**, and performing full system verification to ensure **reliability** and **compliance** with medical device standards.
- Collaborated with cross-functional teams to ensure the product met **regulatory requirements** (e.g., ISO 13485) and adhered to **quality assurance processes** before release.

<b>Company</b>	<b>TATA Communications Ltd., Chennai, India</b>
<b>Position</b>	<b>Technical Lead</b>
<b>Project</b>	<b>CDN (Content Delivery Network)</b>
<b>Duration</b>	<b>June 2021 – Feb 2023</b>
<b>Technologies Used</b>	<b>Linux, C, C++, Multi-threading, STL, Socket Programming, Varnish, Nginx</b>

#### **Responsibilities:**

- Developed and maintained code for CDN platform, improving performance and scalability.
- Designed and implemented solutions for new enhancements.
- Involved in unit testing and defect resolution, ensuring smooth and efficient deployment.

<b>Company</b>	<b>HCL Technologies Ltd., Chennai, India</b>
<b>Position</b>	<b>Technical Lead</b>
<b>Project</b>	<b>IPG PHOTONICS</b>
<b>Duration</b>	<b>March 2017 – April 2020</b>
<b>Technologies Used</b>	<b>Linux, C, C++, Multi-threading, STL, Socket Programming</b>

#### **Responsibilities:**

- Designed inventory management module for monitoring and modifying inventory parameters.
- Developed and integrated communication libraries for module interaction.
- Conducted unit testing and ensured high-quality software development.

<b>Company</b>	<b>Altimetrik India Pvt Ltd., Chennai, India</b>
<b>Position</b>	<b>Staff Software Engineer</b>
<b>Project</b>	<b>Bumblebee</b>
<b>Duration</b>	<b>Feb 2016 – March 2017</b>
<b>Technologies Used</b>	<b>Linux, C, C++, Multi-threading, STL</b>

### **Responsibilities:**

- Developed database migration code and enhanced payment gateway functionalities.
- Migrated database tables from legacy systems to new DB.
- Involved in system design and unit testing to ensure defect-free releases.

<b>Company</b>	<b>Samsung India Software Center, SRI-Delhi, India</b>
<b>Position</b>	<b>Senior Software Engineer</b>
<b>Project</b>	<b>Automatic Testing Tool (ATT) for Samsung Smart TV Emulator</b>
<b>Duration</b>	<b>Aug 2012 – Feb 2016</b>
<b>Technologies Used</b>	<b>Linux, C, C++, Multi-threading, Socket Programming</b>

### **Responsibilities:**

- Designed and implemented ATT for the Samsung Smart TV Emulator.
- Worked on platform-independent communication using TCP/IP.
- Developed and tested communication between ATT and Samsung Emulator.

Company	Patni Computer Systems Limited, India
Position	Software Engineer
Project	SSU– Master Computer, Server Apps & Configuration-UI
Duration	Aug 2010 – Aug 2012
Technologies Used	Linux, C, C++, Multi-threading, Socket Programming

### Responsibilities:

- System design and implementation for configuration UI.
- Developed and optimized multi-threaded server applications in C/C++ for handling network communication and server configurations.
- Implemented socket programming for inter-process communication between client-server applications.

### Research Associate

Company	Ministry of Communication & Information Technology, Govt. of India, New Delhi
Position	Research Associate
Project	AnglaBharti – Machine-Aided Translation System for Indian Languages
Duration	April 2008 – June 2010
Technologies Used	Linux, C, C++, Multi-threading, Artificial Intelligence

### Responsibilities:

- Contributed to the **AnglaBharti project**, a **Natural Language Processing (NLP)** and **Artificial Intelligence (AI)** system developed at **Indian Institute of Technology (IIT) Kanpur**.
- Developed **Parsers**, **LEX Grammar**, and **Tokenizers** for the English to Hindi machine translation system.
- Implemented various **data structures** to enhance system performance and accuracy in translations.
- Involved in the identification and resolution of system bugs, ensuring smooth functionality and robust performance.

## Educational Qualifications

Degree	Institute	Year of Passing
M.C.A.	UIET, CSJM University, Kanpur	2004-2007
B.Sc. (Physics, Math)	VBS Purvanchal University, Jaunpur	1999-2002
Intermediate	U.P. Board	1999
High School	U.P. Board	1997

## Personal Skills

- Excellent verbal and written communication skills.
- Strong analytical skills with a high sense of team spirit and self-confidence.
- Adaptability to dynamic work environments and new technologies.

## Personal Details

- **Date of Birth:** 27th April 1983
- **Permanent Address:** Vi+Po- Heerapatti, Azamgarh (UP)

## Declaration

I hereby declare that all the information furnished above is true to the best of my knowledge.

**(Abhay Narayan Singh)**