

# Varun Bhatt

Senior Specialist - Product Development,

FIS Global Solutions,

C# .NET| C/C++ Backend Architect

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## SUMMARY

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- Over 10 years of experience in developing Enterprise software applications using **C/C++**, **C#** and **.net technologies** on **Windows** and **UNIX** in **CAD** and **Finance** Domains.
- Deep understanding of **OOPs** concepts, **SOLID Principles**, **Design Patterns** and **Clean Code Practices**.
- Good command over **Data Structures** and **Algorithms**.
- Experience in creating **Multithreaded** applications.
- Experience in writing Unit tests and Integration tests.
- Experience in managing entire software development life cycle using **Agile methodologies**.
- Good interpersonal and communication skills.

## TECHNICAL SKILLS

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Operating Systems:	Windows, Solaris
Languages:	C#, C/C++, VC++, XML, JSON
Scripting Languages:	Powershell Script, Shell Script
Databases:	MS SQL, MongoDB
Web Technologies:	ASP .Net MVC, REST API, Javascript, JQuery, React JS, EJS, HTML, CSS, Bootstrap, Node JS, Express framework
Tools:	Visual Studio, VS Code, Sun Studio, SSMS, Autocad, Microstation, CADD5, Creo, JIRA, Team City
Others:	.Net, Entity framework, IBM Websphere MQ, MFC, STL, Data Structures, FIX Protocol, SFTP, Algorithms, Multi threading, GDB debugging, LEX and YACC parsing techniques
Version Control:	Clearcase, TFS, SVN, GIT

## TRAININGS & CERTIFICATIONS

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- 3 months of training in Systems and VC++ at IGATE
- Attended training on C# at IGATE
- Acquired L1(level-1) & L2(level-2) certifications in Systems at IGATE
- Attended training on Agile methodologies
- Google Cloud Platform Essential Quest on Qwiklabs

## PROFESSIONAL EXPERIENCE

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Senior Specialist - Product Development	FIS	Oct 2015 – Present
Software Specialist	PTC software	June 2013 – Oct 2015
Senior Software Engineer	IGate	Aug 2010 – May 2013

## Projects:

### 1. ML Predictor (Hackathon project)

<b>Synopsis</b>	Machine Learning Predictor tool - train machine learning models using different hyperparameters, visualize the training process, test the trained model and finally save the model to reuse or download it and serve using backend server.
<b>Role</b>	Developer (Owner)
<b>Responsibilities</b>	<ul style="list-style-type: none"><li>Developed the machine learning tool from scratch as part of hackathon event</li></ul>
<b>Environment</b>	<b>Node JS, Express framework, MongoDB, Embedded Javascript, JQuery, Semantic UI CSS Framework, Tensorflow JS</b>

### 2. Phase3 Middleware Applications

<b>Synopsis</b>	Phase3 is a real-time order-to-settlement multicurrency, cross-product securities processing system for broker-dealers. Its middleware comprises of many client facing applications such as FIX_CORE engine, Bloomberg engine, SFTP Spreadsheet bulk upload, DTCC Corporate Announcements Parser, ACATS Report parser, UI with backend Web APIs.
<b>Role</b>	Project Lead and Developer
<b>Responsibilities</b>	<ul style="list-style-type: none"><li>Created high performance multithreaded FIXOMS engine</li><li>Created new FIX interface for Commission calculation</li><li>Created SFTP Spreadsheet bulk upload application to support booking the trades through Excel spreadsheet</li><li>Created different XML parsers for Corporate Announcements from DTCC</li><li>Refactored ACATS Report parser - split the single parser into 2 separate applications – Parser and ReportWatcher for report polling to implement scheduling, email notification, report processing in particular order</li><li>Migrated core parser from C to C++</li></ul>
<b>Environment</b>	<b>C# .NET, C++, FIX Protocol, ASP .Net REST API, MS SQL</b> , Entity Framework, NUnit, IBM Message Queue, Firedaemon, Windows

### 3. AMBIT Capital Management

<b>Synopsis</b>	Banks now face incredible pressure to ensure that they meet complex regulatory compliance requirements. Ambit Capital Management ensures that a bank is compliant with regulatory requirements, is able to set appropriate bank limits and can develop the most effective risk mitigation strategies. The core calculation engine was written in C++ while the rest of the application was written in .Net.
<b>Role</b>	Project Lead and Developer
<b>Responsibilities</b>	<ul style="list-style-type: none"><li>Implemented functionality to re-run the transformations with manual adjustments</li><li>Designed and implemented new screen for manual adjustments</li><li>Created a Regression Test framework</li><li>Changed transformations as per regulatory changes</li></ul>
<b>Environment</b>	<b>C# .NET, Winforms, C++, MS SQL</b> , Entity Framework, NUnit, Windows

## 4. CREO Plotting/Printing

<b>Synopsis</b>	Creo is a modelling software used by many big companies all across the globe. I was part of Plotting module. It supports printing the part or drawing in many formats – Win32printmanager, HPGL, Postscript, JPEG, TIFF and many more.
<b>Role</b>	Project Lead and Developer
<b>Responsibilities</b>	<ul style="list-style-type: none"><li>• Implemented caching the original sceengraph in plot graphics to avoid rerendering the whole sceengraph when user cancels the functionality in between. This gave around 90% performance gain</li><li>• Implemented run through trace file functionality by the logged commands</li><li>• Added support for multipage TIFF and CGM output</li><li>• Handled Arc at quadrant end points using tessellate Arc using lines method</li></ul>
<b>Environment</b>	<b>C++, Windows</b>

## 5. CADD5 Piping, Cabling and HVAC

<b>Synopsis</b>	CADD5 is a modelling software used by many big companies all across the globe. This included maintenance and enhancements in CADD5 piping module.
<b>Role</b>	Developer
<b>Responsibilities</b>	<ul style="list-style-type: none"><li>• Implemented dragging and repositioning entities functionality using matrix transformations</li><li>• For HLR functionality it was comparing each entity with all the other entities. I changed it to do this layer wise or part wise if the extents of two parts in assembly are not intersecting. This gave around 30% performance gain</li><li>• It supported 250000 entities earlier. Some customers wanted to increase this limit. So we doubled the limit to 500000 using sign bit in entity Id</li></ul>
<b>Environment</b>	<b>C/C++ on Solaris</b>

## 6. AVEVA NET GATEWAYS

<b>Synopsis</b>	There are five different gateways which convert different 2D and 3D drawing files into the SVG or ZGL files and the EIWM files which can be viewed in the AVEVA NET PORTAL. Basically these Gateways convert raster graphics to vector graphics as it is very light weight to be uploaded to portal.
<b>Role</b>	Developer
<b>Responsibilities</b>	<ul style="list-style-type: none"><li>• Implemented Autocad colours 0(by Block) and 256(by Layer) in the presentation mapping file</li><li>• Implemented object tagging based on Cells and Levels provided in the presentation mapping file</li><li>• Refactored all the Gateways to use wide char to handle UNICODE characters such as Cyrillic symbols</li></ul>
<b>Environment</b>	<b>C++ &amp; C# on Windows</b>

## 7. PL1 to C++ Migration

<b>Synopsis</b>	We created a tool to convert around 3.2 million LOC from PLI to C++. First the tool converts the PLI code into the XML nodes. We used PLI parser to create XML nodes. And then the tool converts these nodes into C++.
<b>Role</b>	Developer
<b>Responsibilities</b>	<ul style="list-style-type: none"><li>• Designed the container classes to mimic some of the PLI constructs</li><li>• Implemented special structures to convert some complex constructs (e.g dynamic structures)</li><li>• Implemented Ref classes for dynamic collections and to receive static counterparts in Ref classes parameters in functions</li><li>• Wrote different utilities to collect data using the PL1 parser (LEX and YACC) for reviewing some complex constructs</li></ul>
<b>Environment</b>	<b>C/C++ on Windows, LEX and YACC Parsing</b>

## EDUCATION

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2006-2010	<b>B.E Electronics</b> Birla Vishvakarma Mahavidyalaya, V.V Nagar, Gujarat	<b>62.95%</b>
2005-2006	<b>Gujarat Board XII</b> Reliance School, Baroda, Gujarat	<b>88%</b>
2003-2004	<b>Gujarat Board X</b> Reliance School, Baroda, Gujarat	<b>83.43%</b>

## ACHIEVEMENTS

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- Received **Excellence award** in PTC.
- Received **Special stock award** in PTC.
- **10th in Gujarat** in **GCET** (MBA Entrance).
- Got **99.83 percentile** in **MAT** (MBA Entrance).
- Represented Gujarat in **National Junior and Youth Chess Championships**.
- Represented Maharashtra in **National Rapid and Blitz Chess Championships**.
- **International Rated** Chess Player.
- Played many State Level Volleyball tournaments.
- Successfully organized Internal Volleyball, TT and Chess tournaments in IGate, PTC & FIS.