

Sathish Kottravel

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I have software development experience in industry and academia. Passionate about research and development of novel technologies, highly motivated and quickly adaptable to new challenging environment. Transforming ideas into functional, interactive 3D visual application through programming is something that I enjoy most. Recently started a freelancing company to develop projects during my spare time. I have broader experience in programming and software development ranging from developing graphics and visual applications, AI medical applications to Devops, web and mobile app development. My long term goal is to become proficient in project management in areas such as Data Science, AI, gaming, medical applications.

Employment

- **Vizelligence MediaLabs, www.sathishkottravel.com/vizelligence** **Norrköping**
Consultant *May 2020*
Being self-employed, I started Vizelligence MediaLabs (enskild firma) to offer consultation and development support for AI, Game Development, Medical Data Visualization, Mobile and Web App development. Since the start of the company, I worked with Bluetooth technologies using React Native and ReactJS, Brain signal visualization in Unity3D game engine. Recently acquired responsibility Devops to build CI/CD pipelines using Azure platform for a Data Science project.
- **Enfo Group** **Norrköping**
Consultant *May 2019– Oct 2019*
I worked as a consultant developing image analysis software. My responsibilities include improving an existing feature, investigating the deployment of Deep Neural Networks (runtime inferencing) in GPU and CPU platforms. OpenVX, MIVisionX, WinRT/C++, WinML are some of the APIs that has been investigated during this project.
- **Linköping University, Media Technology, ITN** **Norrköping**
Phd (ongoing) *June 2014– February 2019*
I was employed as doctoral student, researching in the field of Scientific Visualization. My responsibilities include developing novel immersive 3D visualization software tools for research using C++, OpenGL, Qt, Python, C# Unity.
- **Linköping University, Media Technology, ITN** **Norrköping**
Research Engineer *Sep 2012– May 2014*
I was employed as a research assistant and also as a research engineer. I was hired to be one of the developers of a new open source visualization framework Inviwo (www.inviwo.org).
- **IGOLD TECHNOLOGIES Pvt., Ltd., .** **Chennai, India**
Senior Software Engineer *Dec 2006– Jul 2009*
Commercial proprietary product development such as TSV-Pre, CAE Simulation Software using MS tools. Developed software tools for Bolt Modeling, Crack Analysis, Geometric Transformation, Hex Element Meshing.
- **PROMETECH Software, Inc, Tokyo University.** **Tokyo, Japan**
Free Lance Software Developer *May 2006 – Nov 2006*
Developing proprietary CAE Simulation Software that includes, automation tools for applying Loads and Boundary Conditions, Line Welding and Ship Building.

○ **Simulation Technology Services Pvt., Ltd.**

Chennai, India

○ *Programmer*

Jul 2004 -- Apr 2006

Product : Venus-Pre, SimLab, CAE Simulation Software. Projects: Developing and implementing algorithms for geometric and assembly modeling, DataStructure Acceleration

Education

Academic Qualifications.....

- **Linköpings University** **Norrköping Kampus**
○ *Phd in Interactive Visualization (Ongoing)* *2014–2018*
- **Linköpings University** **Norrköping Kampus**
○ *Masters in Advanced Computer Graphics* *2009–2012*
- **Kongu Engineering College** **India**
○ *Bachelors in Engineering, 4 years degree in Computer Science* *2000–2004*

Technical and Personal skills

- **Programming Languages:**
Proficient in: C, C++, Python (Extension&Embedding), OpenGL, GLSL, CUDA, OpenCL, OpenMP/MPI.
Knowledge in: C#, Matlab, Octave, Javascript, WebGL.
- **Software Development Tools:**
Proficient in: Continuous Integration, Git, Unit Testing (GoogleTest API), CMake.
Knowledge in: Release Management, Regression Testing, Docker Tools.
- **Platform:** Windows, Linux. (Knowledge in: Batch scripting and Shell scripting).
- **Technical Expertise and Knowledge:**
Proficient in: Scientific Visualization, Virtual Reality (VR), Data Parallelization (GPGPU), Multicore and Distributed computing, AWS EC2, Rapid visualization prototyping (www.inviwo.org).
Knowledge in: Machine Learning, Deep Learning and Neural Network using TensorFlow (Python), Computer Vision (OpenCV), SuperComputer Application (NSC), Remote Rendering, Arduino IoT (C++)
- **Software API:**
Inviwo, Unity3D (Native Plugins), VTK, OpenSceneGraph, OpenCV, TensorFlow, SciKit, AutoDesk Maya (C++ Plugin development), AutoDesk 3DSMax, Three.js, TeX.
Knowledge in: StarCluster Toolkit for AWS EC2 cluster management.
- **General Business Skills:**
Good presentation skills, Experienced in collaboration projects and Works well in a team.
- **Other:** Familiar with situations that demands working under pressure, Research and Development, Good at writing well structured reports, Comfortable in low level programming.

Notable Projects.....

- **Research Contributions during employment at Linköpings Universitet:**
 - First authored publications.**
 - *Visual Analysis of Charge Flow Networks for Complex Morphologies.Computer Graphics Forum 2019*
 - *Visual Analysis of Stochastic Trajectory Ensembles in Organic Solar Cell Design, Informatics - 2017*
 - *Coverage-Based Opacity Estimation for Interactive Depth of Field in Molecular Visualization, IEEE Pacific Visualization Symposium - 2015*

Co-authored publications.

- *Multimodal Volume Illumination by Erik Sundén et. al., Computers & Graphics - 2015'*
- *A Crowdsourcing System for Integrated and Reproducible Evaluation in Scientific Visualization by Rickard Englund, et. al. IEEE Pacific Visualization Symposium - 2016*
- *Inviwo -An Extensible, Multi-Purpose Visualization Framework , Erik Sundén et. al., Poster, IEEE Vis17*
- *Inviwo-A Visualization System with Usage Abstraction Levels. Jönsson, Daniel, et al., IEEE TVCG (2019).*

o **Masters Thesis at Linköpings Universitet:** '*GPU Accelerated Non-Linear Soft Tissue Deformation*'

This project cultivated my knowledge in GPGPU programming using CUDA. Through this project I had access to state of the art technologies in Virtual Reality Lab in our division, a joint infrastructure shared between Linköping University and VisualiseringsCenter. I worked with Haptics technologies to experience visualization through a new modality, that is sense of touch.

o **Industrial Project during employment in India, Japan:** '*CAE Tools for automation*'

During this period of four years I was employed as low level programmer. I also worked for Tokyo based company where I had an opportunity to experience and appreciate the work ethics of different culture. My role was to develop plugins and modules that suits the needs of various customers from a single common software core. Development, Testing and Production were tightly integrated for high quality delivery.

Interests and extra-curricular activity

- o I was one of core developers of Inviwo Framework.
- o I am actively spending time on learning Swedish.
- o Space Science enthusiast. I completed Certified Summer course in Human Space Flight given at Umeå University, Kiruna, Sweden
- o Completed Machine Learning Course in CourseEra given by Stanford University. Currently taking specialization course in Neural Networks.
- o I am reasonably good at sketching, hence I have an eye for details. I am a self-taught sketching artist. Recently I enrolled in a formal sketching course to sharpen my skill.
- o I was a member of technical support group called C-Tech that functions under research division at VisualiseringsCenter. My duties involved solving hardware problems related to various display technologies.
- o As part of my research duties I help course instructors to set up lab exercises and assist students in the lab.
- o During sparetime, I develop projects that are fun and interactive. Example: Voice Command for Interaction.
- o I was former member of ToastMasters Club at Linköping for developing public presentation skills.

References

Reference Contact Available upon Request.