

Sathyam Mohanram Vellal

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SUMMARY

Passionate and detail-oriented CS grad student, focusing on Scientific Computing and Computer Graphics, looking for full-time roles. Generalized Specialist, eager to learn, and ability to break down complex problems and translate into modular, robust and scalable software.

EDUCATION

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| University of Southern California , Los Angeles, CA | Aug 2016 - May 2018 (expected) |
| <i>Master of Science (M.S.)</i> , Computer Science (High Performance Computing & Simulations) | GPA: 3.42 / 4.00 |
| Relevant Coursework: Computational Physics, Scientific Computing, 3D Graphics, Computer Animation: | |
| PES University , Bengaluru, India | Aug 2010 - Jun 2014 |
| <i>Bachelor of Engineering (B.E.)</i> , Computer Science & Engineering | GPA: 8.85 / 10.00 |

WORK EXPERIENCE

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| PAYPAL INC. , Bangalore, India | |
| SOFTWARE ENGINEER | Jan 2014 - Jul 2016 |
| <ul style="list-style-type: none">Reduced false positives in detection of fraudulent transactions in risk models, directly impacting annual revenue.Designed and developed 2nd-gen Payouts experience, in-house Free Return Shipping activation and product experiences, multi-faceted white-labeled mobile-wallet solutions (Telcel Pay and Claro Pay). Resolved and supported issues on the go.Awarded for being proactive, contributions, and mentoring. Was part of winning teams for multiple product hackathons | |
| BOOST C++, UBLAS LIBRARY , Remote | |
| CONTRACT DEVELOPER, GOOGLE SUMMER OF CODE | Jun 2013 - Aug 2013 |
| <ul style="list-style-type: none">Developed new aligned allocator, extending <code>std::allocator</code> that is guaranteed to allocate on word-aligned memory addresses.Modified and restructured core parts of the library for better auto-vectorization by the compiler, and hence boost performance.Modified and implemented better and more efficient BLAS routines to improve the overall performance of the library. | |

PROJECTS

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|---|---------------------|
| REAL-TIME VISUALIZATION OF SMOKE | Nov 2017 - Dec 2017 |
| <ul style="list-style-type: none">Implemented an OpenGL application to simulate and visualize the flow of smoke from a source within a container. The application allows for placing multiple sources on the viewport, and for applying global forces on axial directions. Shaded using GLSL. | |
| PROCEDURAL TEXTURE FILE GENERATOR | Oct 2017 - Dec 2017 |
| <ul style="list-style-type: none">Built a rendering engine and tool to preview procedural textures, and generate image files of given resolution, with option to also create mipmaps. Implemented using C++ and Phong Shading. The preview used Jittered Supersampling for Anti-Aliasing on models. | |
| SIMULATIONS AND ECONOPHYSICS | Jun 2017 - Aug 2017 |
| <ul style="list-style-type: none">Analyzed and examined role of agent-based modelling, molecular dynamics and kinetic theory of gases in the field of Economics.Implemented kinetic wealth-exchange model, with and without savings, to simulate a simple economy for sizeable number of agents. | |
| DISTRIBUTED MAP SEARCH | Apr 2017 - May 2017 |
| <ul style="list-style-type: none">Implemented distributed map searching techniques, using A* and Multi-layered Overlay Method to find optimal routes between nodes in a large dataset of Los Angeles's intersections. Designed for dynamic and changing travel-times between two nodes. | |
| SMART PERSONAL ASSISTANT | Jan 2014 - May 2014 |
| <ul style="list-style-type: none">Developed an intelligent mobile assistant for common day-to-day personal activities, featuring Smart Alarms to automatically set alarms, and Smart Notifications to detect and prioritize user's SMS and Email, based on user's calendar, schedules and preferences. | |

SKILLS

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|-----------------------------------|---|
| • Programming | C/C++, Java, Python, JavaScript, Shell, Matlab |
| • Computer Graphics | OpenGL, CUDA, OpenCL, GLSL, GPGPU |
| • Applied Computer Science | Molecular Dynamics, Fluid-Dynamics, Cellular Automata, Linear Algebra, Generative Music |
| • Others | HTML/CSS, Node.js, React/React-Native, iOS, Android, Git, SVN, documentation tools |