Filipe de Carvalho Nascimento

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SUMMARY

I am a COMPUTER SCIENTIST WITH A GREAT PASSION FOR COMPUTER GRAPHICS, GEOMETRY PROCESSING, AND PHYSICALLY BASED ANIMATION. I'VE BEEN WORKING CLOSE TO THOSE TOPICS FOR QUITE SOME TIME NOW. MY EXPERIENCE INCLUDES THE DESIGN/IMPLEMENTATION OF FLUID SOLVERS, REAL-TIME RENDERING TECHNIQUES, SPATIAL DATA STRUCTURES, MESH MANIPULATIONS, AND PHYSICS SIMULATION. I'VE ALWAYS BEEN MOTIVATED TO BUILD TOOLS TO HELP PEOPLE AROUND ME, INCLUDING GRAPHIC DEBUGGERS, VISUALIZATION TOOLS, AND GRAPHICS EDITOR TOOLS. IN RECENT YEARS I ALSO TURNED MY ATTENTION ON CODE EFFICIENCY: MAKING USE OF GPUs, CPU THREADS AND TAILORING DATA STRUCTURES BASED ON MEMORY ACCESS.

EDUCATION

PhD		2017 - PRESENT
M.S.	IN COMPUTER SCIENCE	2013 - 2016
B.S.		2008 - 2012

INSTITUTE OF MATHEMATICS AND COMPUTER SCIENCE (ICMC) -
UNIVERSITY OF SÃO PAULO (USP), SÃO CARLOS, SÃO PAULO, BRAZIL

SKILLS & INTERESTS

OPENGL/VULKAN/CUDA *and more recently*: OPENFOAM/OPENVDB

PROGRAMMING LANGUAGES

C/C++(PREFERRED)/PYTHON *and some experience with*: RUST/R

LANGUAGES

PORTUGUESE, ENGLISH, FRENCH (DÉBUTANT), JAPANESE (BEGINNER)

PROFESSIONAL EXPERIENCE

Software Engineering Intern at Google Inc. (YouTube)   JAN - MAR 2016
WORKED ON 360° VIDEO SUPPORT FOR YOUTUBE APP ON SONY'S PLAYSTATION 4 VR.

RESEARCH EXPERIENCE

Digital Animation of Powder Snow Avalanches   2017 - PRESENT
GRADUATE RESEARCH SUPPORTED BY FAPESP
Multimaterial Fluid Simulation for Comp. Graphics   SEP 2014 - FEB 2015
VISITING SCHOLAR AT UNIVERSITY OF WATERLOO (UW), WATERLOO, ONTARIO, CANADA
SUPERVISOR: CHRISTOPHER BATTY
Reliable polygonal approximation of implicit curves   2011-2012
UNDERGRADUATE RESEARCH SUPPORTED BY FAPESP. SUPERVISOR: AFONSO PAIVA

SCIENTIFIC PUBLICATIONS

RBF Liquids: An Adaptive PIC Solver Using RBF-FD   2020
PAPER AT ACM SIGGRAPH ASIA 2020 AND ACM TRANSACTIONS ON GRAPHICS
Approximating implicit curves on plane and surface triangulations with affine arithmetic (AA)   2014
PAPER AT COMPUTERS & GRAPHICS JOURNAL (CAG), VOLUME 40
Approximating implicit curves on triangulations with AA   2012
PAPER AT XXV SIBGRAPI CONFERENCE ON GRAPHICS, PATTERNS AND IMAGES

ACTIVITIES

Programming Contests (ACM-ICPC)
- WORLD FINALS (AS COACH)   2014
- LATIN AMERICA REGIONAL CONTEST (1ST PLACE) (AS COACH)   2013
- LATIN AMERICA REGIONAL CONTEST   2009
- BRAZILIAN REGIONAL CONTEST   2009-2012
Teaching Assistant
- ADVANCED ALGORITHMS LABORATORY COURSE   2013