NICOLAS BLIN

PARIS, FRANCE

(+33) 6.75.90.61.67

nicolas.blin7@hotmail.fr

Looking for a 6-month end of study internship in C++/GPGPU programming starting in February 2022

EDUCATION

Current EPITA – Software engineering school
Double specialization IMAGE/Research

2017/2019 University Paris Descartes ~ Bachelor in IT

TECHNICAL SKILLS

Programming languages

- Advanced: C; C++ ; CUDA
- Intermediate: Python ; Java ; SQL
- Basic: Assembly

Frameworks / libs

- Keras / TensorFlow
- OpenCV / Scikit-Learn / ITK;VTK
- OpenGL

Additional technical skills

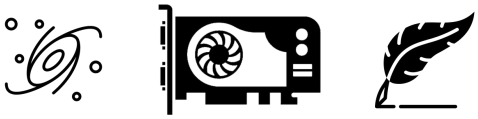
- Optimization and parallelization
- Machine learning / Deep learning
- Image Processing

LANGUAGES

- French (mother tong)
- English (fluent ~ TOEIC 970)

ACTIVITIES & INTERESTS

- GPU programming applied to science
- Deep-learning
- Cosmology
- Personal development & coaching
- Analysis of musical texts



WORK EXPERIENCES

Research assistant at EPITA's R&D lab (C++/CUDA)

2 years – 2020/2021

- GPU parallelization of the max-tree algorithm
- Objective: Achieve real-time processing
- State of the art review and design of a massively parallel algorithm
- Programming, benchmarks, and optimizations
- Result: x10 speed-up, real-time achieved (382 fps)

CNRS internship in medical imaging (C++/CUDA)

5 mois - 2020

- GPU optimization of the Holovibes software
- Real-time retinal blood flow analysis software
- Goal: speed-up input throughput from 500 fps to 8000 fps
- Use of C++/CUDA optimization skills
- Result: Gain x20, 10000 fps, goal achieved
- Form an open-source association, status: Vice-President

PROJECTS

Ray Tracer (C++/CUDA) *2 months – 2021*

- Program from scratch a Ray Tracer working on GPU
- Camera management, rays, 3D world via projective geometry
- Handle lights, shadows, interactions between objects...
- Result: photorealistic scene with mirror spheres in real-time

Deep learning framework (C++/CUDA) *2 months – 2020*

- Creation of a framework able to classify images
- Implementation of tensors, dense layers...
- Acceleration via massively parallel operations on GPU
- Advanced C++ design (CRTP, variadic template, move semantic...)

Image Processing and Drosophila (Python) *1 month – 2021*

- State of the art review to propose the best solution
- Segmentation of wings using mathematical morphology
- Identification of key points using ORB Harris
- Race deduction based on the number of points

$_ Fully functional shell (C) *1 month – 2019*

- Team organization using GitKraken (team of 4)
- Lexer/parser LL + AST to handle if, for, while...
- Documentation & python test suite (>500 tests)