

# Xu Liu

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## Education

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<b>Master of Computer Science</b>	Tufts University, US	Aug. 2016
<b>Master of Material Science</b>	Southwest Jiaotong University, China	June 2008

## Skills

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C++/Java/Python, HTML/CSS/JavaScript, OpenGL/WebGL/CUDA, PostgreSQL/MongoDB

## Projects ([github.com/liuxu1005](https://github.com/liuxu1005) / [liux1005.github.io](https://liux1005.github.io))

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[Sphere in Water](#) (Computer Graphics)

Ray tracing with reflection and refraction in WebGL shader, collision and response, caustics

[Sorting on CPU and GPU](#) (Computer Architecture)

Comparing performances of merge, radix and bitonic sortings on GPU and CPU

[Content Centric Network Report](#) (System Design)

Final paper for System Design class, discuss CCN network architecture

[Triangulation/Monotonicity](#) (Computational Geometry)

Java applet demo for detecting monotonicity and triangulation polygons

[Channel Code/Modulation/Demodulation/Routing](#) (Networks)

Basic algorithms for data-link layer, network layer and transport layer

[JOS](#) (Operating System)

Bootimg, process scheduling, memory management, file system, network card driver, web server

[KNN/Naive Bayes/Perceptron](#) (Machine Learning)

Basic algorithms from Machine Learning

## Courses

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From Tufts University:

Computation Theory, Programming Languages, Discrete Mathematics, Algorithm, Data Structures  
Artificial Intelligence, Machine Learning, Computational Geometry, Computer Graphics,  
Advanced Computer Architecture, Machine Architecture and Assembly Language,  
Database, System Design

Taught by self:

Operating System (following MIT 6.828 Operating System Engineering)

Networks (following MIT 6.02 Digital Communication and 6.829 Networks)

## Other Experiences

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<b>Application Engineer</b>	Angstrom Advanced, Braintree MA	Mar. 2012 – Jan. 2015
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Technical support on application, installation & troubleshooting for chemical/material analysis instruments such as SEM, AFM/SFM, XRD, EDS/WDS, ICP-AES, GC-MS.

<b>Lithograph/Intergrated Process Engineer</b>	Shanghai, China	Feb. 2008 – Aug. 2010
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Develop and maintain processes for 6" silicon wafer production line.