

# TRISTAN CHARPENTIER

tristancharpentier@protonmail.com -- +1 (240) 889-2731 -- Falls Church, Virginia, USA --  
tristancharpentier.com | github.com/hashFactory  
Bilingual: English/French | Nationalities: US/French

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## EDUCATION

**Sorbonne Université** 09/01/2018 – 06/01/2023  
B.S. in Computer Science - Favorite classes: Algorithms II, Discrete Math., Data Science Paris, France

**George Mason High School** 09/01/2014 – 06/01/2018  
International Baccalaureate - Higher level Comp Sci., Math, and Psychology Falls Church, VA, USA

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## EXPERIENCE

**Augmented Acoustics - Internship** 06/01/2022 - 08/07/2022  
iOS and infrastructure developer Paris, France

- Designed and implemented the server infrastructure and iOS frontend for the video aspect of real-time video/audio streaming using GStreamer. Implemented in C and Swift.
- Achieved sub-100ms glass-to-glass latency for A/V synced livestreaming.
- 40 weekly hours

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## SKILLS

- Proficient with: **C++, Python, Bash, C**
- Experience with: **GStreamer, Swift, Rust**, Web Development (**JS / CSS / HTML**)
- Additional Background in: **OpenAI API, GIS, FFMPEG, Linux sysadmin, PyTorch, Godot**
- Some experience with graphics programming: **Vulkan, OpenGL, Blender, OpenCV, Shaders (GLSL)**

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## PROJECTS

**KinectVisuals** **C++, OpenCV, GStreamer, HTML/CSS**  
A real-time and procedural visualizer making use of the depth map stream from Kinect for Xbox 360 to **generate editable visuals**. Parameters can be controlled in real time from a web interface, xbox controller, or DJ mixing table. Software also reacts to music, streams in real-time to iPhone for VR

**beta.trido.fr** **Python, HTML/CSS**  
A social media **static site generator and HTTP server** written only using Python's standard library. The entire website is **interactive** and **responsive** and uses no JS in the front or back.

**TridoNN** **Python, PyTorch, FFMPEG**  
A **personalized neural network** in PyTorch trained to predict how much I am likely to enjoy a song based on complete Spotify listening history and an open-source audio classifier (gh.com/EfficientAT).

**Climate Visualizations** **Python, NumPy, FFMPEG, Blender**  
Scripts meant to visualize historical and predicted climate data and generate aesthetic visuals. Data sourced from Europe's CDS and the US's NOAA.

**ImThirsty** **Swift**  
An **iOS** application that displays the closest public restrooms and drinking water fountains using an **OSM API**.

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## RECOGNITION

**Air Force Association Grant** 05/01/2018  
Received **\$1,000 grant** from the AFA to continue and improve the CyberPatriot program at George Mason High School **based on my team's performance** in the 2018 CyberPatriot competition