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| Roya Shams | 647-302-0080  roya.shams@gmail.com |  | royashams.com  linkedin.com/in/royashams  github.com/royashams | |
| Experience  **Dot Health** – Software Developer Intern Sept. 2018 – Oct 2018   * Designed and Implemented **ReactJS** features across **back-end**, **front-end** **user** and **internal interfaces** at an early-stage startup for patients to digitally access medical records from any Canadian institution * Worked closely across Operations, Development, and Product departments to **streamline the workflow** of the Operations team * Communicated and took initiative with design choices for **internal tooling** * Further developed **RESTful API** by creating **endpoints** and **routing methods**   **Hatch Coding** – Alpha Coach Sept. 2017 – Current   * **Classroom instructor** for afterschool program towards students aged 7-17, assists students with designing and implementing **python** or **processing.js projects**   Projects  Personal Site: [www.royashams.com](http://www.royashams.com) in **HTML, CSS, JQuery** Jul. 2017   * Designed all graphic components using **Adobe Photoshop.** * Used an **iterative design process** and **cognitive walkthrough** with multiple users * **Prototyping, testing, observing user feedback** used for key refinements   Course Projects in Computer Graphics  Shaders in **OpenGL** Mar. 2018   * Implemented ambient, diffuse, and specular components of Phong and Gouraud **photorealistic shading models**, as vertex or fragment shaders * Modified these models to obtain **stylistic results**   Ray tracing in **C++** Apr. 2018   * **Collaboration** with a partner on a ray tracer that computes intersections and renders spheres and planes, following **calculus** and **vector geometry** equations * Computes shadows and **recursively** bounces rays off of objects to produce reflections * Additionally implemented **anti-aliasing** using normal sampling, simulated **depth of field** following the thin-lens model.   Triangulation Matting in **NumPy** and **OpenCV**  Feb. 2018   * [(“Blue Screen Matting”, Smith & Blinn, 1996)](http://graphics.stanford.edu/courses/cs148-09-fall/papers/smith-blinn.pdf) * Computes alpha and color values of a foreground object from 2 sets of images containing a foreground object and a background, and images with the removed foreground object. * **Composites final images** given foreground and a new background.   Image Inpainting in **NumPy** and **OpenCV** Mar. 2018   * [(“Exemplar-Based Image Inpainting”, Criminisi et al. 2004)](https://www.dropbox.com/sh/faacfxcy83qge6b/AABfZOr5oFN_PESOczq-4ZeGa/Readings?dl=0&preview=Criminisi-IEEE-TIP+2004.pdf) * Removes large gaps from digital images using background patches and **similar edge detection.** Fills the remaining area using this information. * Computed **gradients, curve normals, and confidence values** given an image patch. | |  | Education  **University of Toronto, St. George**  Toronto, ON, Canada  (H.B.Sc) **Computer Science** Specialist  Technical Skills   * **Languages:** Python, Java, C, C++, SQL, HTML, CSS, JavaScript, Verilog * **Other Technologies:** ReactJS, OpenGL, OpenCV, JQuery, processing.js, Ajax, Django, NumPy * **Git** and Version Control, VSCode * **OSX** and **Linux** * Graphic Design with **Adobe Creative Suite** * **Autodesk Maya**   Soft Skills   * Teamwork and co-operation * Communication * Leadership and delegation * Conflict resolution * Self motivated and takes initiative * Creative and adaptable   Extracurricular   * **Vice President** of University of Toronto Computer Graphics club (UTCG) (Current) * **Toronto ACM SIGGRAPH** Executive Committee Member (Current) * **SIGGRAPH Student Volunteer**   Vancouver (Aug. 2018)  Los Angeles, (Jul. 2017)   * Hart House Singers – Choir Member (2016-2017) * Independent **photographer, musician, designer and sculptor**   Courses   * Introduction to Visual Computing * Computer Graphics * Operating Systems * Software Design * Web Development * Design of Interactive Computational Media * Introduction to Databases * Algorithm Design, Analysis, and Complexity |