CHRISTOPHER TSAI

☎: 090-1556-4888 ✉: **tsaic@alumni.stanford.edu**

Profile: Creative leader specializing in game design, UX/UI, teaching, visual storytelling, and documentation.
Goal: Spearhead, innovate, and cultivate a culture of curiosity & problem solving creativity as a leader in Japan.

EDUCATION:

Stanford University, Stanford, CA
B.S. and **M.S.** in Electrical Engineering, December 2008 (GPA: 3.94 B.S., 4.16 M.S.)
Coursework in object-oriented design, computer graphics, computer vision, CPU architecture, image processing, DSP, AI, statistical learning, image & video compression, analog & digital circuits, communication systems, network flows, convex optimization, UI/HCI, engineering physics.

Massachusetts Institute of Technology, Cambridge, MA (GPA 5.00 PhD, *not completed*)
Research in computer graphics, image processing, networks, object/scene/face recognition.
Coursework in algorithms, computer vision, graphics, parallel programming, and user interfaces.

Write of Passage, Online Writing Course, Cohort 5. Developed info capture note-taking skills, personal monopoly, drafting process, and language. https://writeofpassage.school

Doshisha University, Kyoto, Japan, studied Japanese language, culture, and trends in technology.

Greenhill Upper School, Addison, TX, Class of 2004 Valedictorian (GPA 4.22)

HONORS & AWARDS:

- Critical Language Scholarship Award, Japanese language study at Doshisha (2010)
- National Science Foundation Graduate Fellow in Computer Graphics & Visualization (2009)
- Stanford Frederick E. Terman Engineering Award for top 5% rank in graduating class (2008)
- Pokémon Video Game World Championships 2008, 3rd place world, 1st place national (2008)
- Stanford Digital Image Processing Object Recognition Competition 2007, 1st place (2007)
- President's Award for Academic Achievement during the Freshman Year (2004-2005)
- Texas Instruments Jerry R. Junkins Memorial Scholarship, National Merit Award (2004)

EXPERIENCE:

Nintendo of Japan, Kyoto, Japan: Creative Director, Smart Device Business Operations
Identify opportunities for Nintendo IP to appear in iPhone/Android mobile apps & games. Creative planning & product direction of apps with Nintendo characters. Coordinate apps with external developers & publishers, such as Pikmin Bloom with Niantic. Feature design, roadmaps, management.

Apple, Cupertino, CA: Developer Documentation Lead, Graphics & Games
Developed & published sample apps in Swift & Obj-C to teach external developers about Core Haptics, Vision, Core Animation, Core Image, Camera & PhotoKit. Authored & curated technical docs, articles, sample code, and sections of Human Interface Guidelines. Prepared WWDC keynotes, crafted demo code, staffed labs. Localized dev docs → Japanese & Mandarin. Managed 10 writers.

Adobe Systems, San Jose, CA: Lead Computer Scientist, iOS Image Processing Apps
Developed (Objective-C++) drawing and sketch iOS app UI. Product roadmap. Designed API for UI elements across Creative Cloud apps: Sketch, Draw, Comp, Mix. Led localization, analytics, onboarding.

Happy Elements, Kyoto, Japan: Games Producer for *Ensemble Girls*
Built data visualization tool (Ruby) for analytics. AB testing of app UI & microtransaction items for popular *Ensemble Girls* title. Optimized DLC cadence, feature roadmap, event-based engagement.

Bandai-Namco Games, Tokyo, Japan: Game Producer for Super Smash Bros. 3DS
Oversaw tools & game graphics rendering for 3DS Smash Bros. action game. Augmented reality image processing apps using stereo camera. Evaluated GPU performance & game modes. Negotiated character inclusion with 3rd party companies. People & production management, timelines, story.

Creatures, Tokyo, Japan: System Application Engineer for *Pokédex 3D Pro, Pokédex for iOS*
Developed (C) sound & image data processing software: sound decompression, image storage, audio/visual signal processing for voice & 3D model data. Programmed UI (Objective-C) & custom QR code recognition for company's 1st mobile app: https://www.pokemon.co.jp/ex/pokedex/ja/

Google, Mountain View, CA: Intern for Google Earth Software Development
Developed (C++) ground-level object detection for 3D modeling in Google Earth. Mobilized large volumes of 2D images & 3D point clouds to classify tree species based on 2D & 3D geometry. Automated tree detection for Maps. Modeled distributions for regions lacking StreetView data.

SANYO Technology Center, San Jose, CA: Intern for Digital Camera Software R&D
Investigated, implemented (C++), evaluated popular scene & object recognition algorithms for Xacti digital cameras. Tested feature extractors (SURF) for content-based image retrieval in photo albums.

EE Department, Stanford, CA: Research Assistant in Image, Video, and Multimedia Group
Developed (C++) tools for MPEG/Blu-ray playback, performance monitoring, H.264 compression, antialiasing, face tracking, and UI. Researched SIFT feature extraction and eigenimage recognition of CD covers & paintings in Nokia N94 cell phone images. Prototyped algorithms in MATLAB.

EE Department, Stanford, CA: Research Assistant in Radar Interferometry Group
Developed (C++) feature detection algorithm for identifying geography of Titan, Saturn's moon. Applied image processing to data from Cassini. Rendered sand dunes, lakes & craters on live surface map. Published paper on craters on Titan: http://www.lpl.arizona.edu/~rlorenz/titancraters.pdf.

CME Department, Stanford, CA: Curriculum Assistant for Mathematics of Engineering
Helped Dr. Eric Darve prepare teaching material for introductory course in differential equations. Wrote MATLAB examples, published assignment workbook, lesson plans. Summer project.

SKILLS:
Foreign Languages: Native fluency in English, N1 Japanese, Mandarin Chinese. Business French
Programming: Objective-C, C/C++, Swift, JavaScript, HTML5, CSS3, Ruby on Rails, Python
Writing Tools: Scrivener, Word/Pages, Excel/Numbers, PowerPoint/Keynote, Sublime, LaTeX
Design Tools: Adobe Photoshop & Illustrator, Affinity Designer & Photo, Sketch, Figma, Acorn
Developer Tools: Xcode, Unix/Linux, VS Code, Eclipse, Unity, Git+GitHub, Nova, MATLAB
SEO: Ahrefs, Keywords Everywhere, Keyword Planner, Twitter, SimilarWeb, F5bot, Moz, Syften, Alexa, SayIt, Google Analytics, HotJar, CrazyEgg, GTMetrix, SEMRush, RankWatch, Subreddit, Rewardful

---

<u>Personal Writing Portfolio</u>

My older writing and past research articles have a permanent home at https://people.csail.mit.edu/halordain/.

<u>Documentation Portfolio</u>

Here is a list of publicly available documents & sample code I have written for Apple's developer documentation website:

Human Interface Guidelines [3]
[iOS User Interaction: Haptics](#)
[Human Interface Guidelines - iPhone X (Japanese Translation)](#)
[Human Interface Guidelines - AR (Japanese Translation)](#)

AppKit [2]
[Documents, Data, and Pasteboard](#)
[Supporting Drag and Drop Through File Promises](#)

Core Image [6]
[Core Image Documentation](#)
[Processing an Image Using Built-in Filters](#)
[Applying a Chroma Key Effect](#)
[Selectively Focusing on an Image](#)
[Customizing Image Transitions](#)
[Simulating Scratchy Analog Film](#)

AVFoundation Camera [11]
[Cameras and Media Capture](#)
[AVCam: Building a Camera App](#)
[AVCamFilter: Applying Filters to a Capture Stream](#)
[Streaming Depth Data from the TrueDepth Camera](#)
[Enhancing Live Video by Leveraging TrueDepth Camera Data](#)
[Capturing Photos with Depth](#)
[Configuring Camera Capture to Collect a Portrait Effects Matte](#)
[Extracting Portrait Effects Matte Image Data from a Photo](#)
[Requesting Authorization for Media Capture on macOS](#)
[Capturing Video in Alternative Formats](#)
[Exporting Video to Alternative Formats](#)

PhotoKit [4]
[PhotoKit Documentation](#)
[Browsing and Modifying Photo Albums](#)
[Creating a Slideshow Project Extension for Photos](#)
[Requesting Authorization to Access Photos](#)

Vision [9]
[Vision Documentation](#)
[Detecting Objects in Still Images](#)
[Tracking the User's Face in Real Time](#)
[Tracking Multiple Objects or Rectangles in Video](#)
[Recognizing Objects in Live Capture](#)
[Classifying Images with Vision and Core ML](#)
[Training a Create ML Model to Classify Flowers](#)
[Cropping Images Using Saliency](#)
[VisionKit Documentation](#)

Core Haptics [7]
[Core Haptics Documentation](#)
[Preparing Your App to Play Haptics](#)
[Playing a Single Tap Haptic Pattern](#)
[Playing Collision-Based Haptic Patterns](#)
[Playing a Custom Haptic Pattern from a File](#)
[Representing Haptic Patterns in AHAP Files](#)
[Updating Continuous and Transient Haptic Parameters in Real Time](#)

Create ML (Japanese Translation) [4]
[Create ML Documentation (Japanese Translation)](#)
[Creating an Image Classifier Model (Japanese Translation)](#)
[Creating a Text Classifier Model (Japanese Translation)](#)
[Improving Your Model's Accuracy (Japanese Translation)](#)

ARKit (Japanese Translation) [5]
[ARKit Documentation (Japanese Translation)](#)
[Understanding World Tracking in ARKit (Japanese Translation)](#)
[Displaying an AR Experience with Metal (Japanese Translation)](#)
[Verifying Device Support and User Permission (Japanese Translation)](#)
[Managing Session Lifecycle and Tracking Quality (Japanese Translation)](#)
[SwiftShot: Creating a Game for Augmented Reality (Sample Code)](#)

Content Marketing Portfolio

Here is a list of publicly available marketing blog entries I wrote to support the launch of creative software apps:

Nintendo Pikmin Bloom: https://pikminbloom.com/ja/ & https://pikminbloom.com/ja/gameplay/

Adobe: iOS Creative Apps

Illustrator Draw: https://blogs.adobe.com/japan/how-to-use-illustrator-draw/
https://blog.adobe.com/jp/publish/2015/03/12/illustrator-draw-version-2-0-launch

Photoshop Sketch: https://blogs.adobe.com/japan/how-to-use-photoshop-sketch/
https://blog.adobe.com/jp/publish/2016/09/07/ccdojo-sketch-3-5-and-draw-3-4-for-ios-update
https://blog.adobe.com/jp/publish/2016/06/01/ccdojo-photoshop-sketch-for-ios-version-3-4-update
https://blog.adobe.com/jp/publish/2016/03/24/general-the-joy-of-sketching-an-homage-to-bob-ross
https://blog.adobe.com/jp/publish/2015/04/22/general-photoshop-sketch-version-2-2-update

Capture CC Campaign:
https://blog.adobe.com/jp/publish/2016/10/17/ccdojo-capture-cc-for-ios-version-2-3
https://blog.adobe.com/jp/publish/2016/08/10/general-adobe-max-japan-tutorial-vol-2-adobe-capture-cc-maxjp
https://blog.adobe.com/jp/publish/2016/07/05/ccdojo-capture-cc-for-ios-version-2-1-1-update
https://blog.adobe.com/jp/publish/2016/05/12/ccdojo-capture-cc-for-ios-version-2-0-update
https://blog.adobe.com/jp/publish/2016/03/31/capture-cc-make-it-tutorial
https://blog.adobe.com/jp/publish/2016/03/08/ccdojo-capture-cc-for-ios-version-1-3-update
https://blog.adobe.com/jp/publish/2016/01/28/ccdojo-capture-cc-for-ios-version-1-2
https://blog.adobe.com/jp/publish/2015/10/22/ccdojo-introduce-capture-cc
https://blog.adobe.com/jp/publish/2015/10/21/general-adobe-capture-cc-campaign

Mix
https://blog.adobe.com/jp/publish/2016/08/05/general-adobe-max-japan-tutorial-vol-1-adobe-photoshop-mix
https://blog.adobe.com/jp/publish/2015/06/15/photo-photoshop-mix-version-1-6-update

Comp:
https://blog.adobe.com/jp/publish/2016/08/09/ccdojo-comp-cc-for-ios-version-2-6-update
https://blog.adobe.com/jp/publish/2016/05/12/ccdojo-adobe-comp-cc-version-2-4-update

Brush:
https://blog.adobe.com/jp/publish/2015/05/18/general-adobe-brush-cc-version-1-2-update
https://blog.adobe.com/jp/publish/2015/02/10/general-brush-cc-version-1-1-update

Voice: https://blog.adobe.com/jp/publish/2015/08/16/ccdojo-introducing-adobe-voice
Shape: https://blog.adobe.com/jp/publish/2015/04/21/line-stamp-sakusei-illustrator-shape

Adobe MAX Conference:
https://blog.adobe.com/jp/publish/2016/12/13/web-adobe-appbox-awards-2016-results
https://blog.adobe.com/jp/publish/2016/10/22/web-max-japan-2016-ui-ux-design-and-creating-ui-parts
https://blog.adobe.com/jp/publish/2016/07/29/adobe-max-japan-2016

Creatures: Pokédex iOS Pro
iOS: https://www.pokemon.co.jp/ex/pokedex/ja/
3DS: https://www.pokemon.co.jp/ex/zenkokuzukan_pro/