A Creative Tech Taxonomy

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By Blair Neal
@baxerpilot
blairneal@gmail.com
www.alldarmad.com

Additional Contributors:
- Mike Romeo - @mightstoring
- Toyoshi Moriska - @moriskatoyoshi

Creative Code Frameworks

- Language Type
  - C++
    - OpenFrameworks
    - Cinder
    - Nap Framework
  - Node Based/Visual Programming
    - TouchDesigner
    - vvvv
    - Vuo
    - Notch
    - node.js
    - Max/MSP
    - Pure Data (pd)
    - Cables.gl
    - Noddebox
    - Tooll
    - Isadora
  - Python
    - Processing.py
  - Ruby
    - Visor
  - Rust
    - Nannou
  - Kotlin
    - OPENNINOR
  - Javascript
    - paper.js
    - p5.js
    - Three.js
  - Java
    - Processing
  - Legacy/Deprecated Tools
    - Quartz Composer
    - Flash
    - Macromedia Director
  - Low Level Graphics programming (Good or most frameworks above)
    - OpenGL/Vulkan
      - GLSL
    - DirectX
    - Metal (iOS and Mac)
- License Types
  - Commercial/Paid
    - Subscription
  - Open Source
    - MIT
    - Mozilla Public License
  - Other
- Use Cases
  - Generative Visuals
  - Multi screen custom setups
  - Data Visualization
  - Interactive/Sensor integration
  - Livecoding
  - ...and so much more

AI/ML

- Content Identification
  - Audio Classification
    - Voice Recognition
      - Speech To Text
  - Text Analysis
    - Sentiment Analysis
  - Data Analysis/ Classification
    - t-SNE
    - VOLO
    - openCV
  - Object Recognition
    - Segmentation
    - Body part Tracking
      - Facial Tracking
      - Hand Tracking
      - Body Pose Tracking
        - Apple Vision Framework
        - PoseNET
- Content Creation
  - Image Generation
    - StyleGAN2
    - PaLPhi
    - Style Transfer
      - Cartoonization
    - CLIP
    - VQGAN
    - GAN/DCGAN
    - DeepDream
  - Image Manipulation
    - Super Resolution
    - GAN Inversion
  - Image Animation
    - First Order Motion
  - Lip Syncing
    - Wav2Lip
  - Text to Speech
    - Neural Voice Synthesis
  - Tools
    - Runway ML
    - Google Collab
    - PyTorch
    - Jupyter Notebooks
    - TensorFlow

Uncategorized Utilities/DevOps

- Scripting
  - MacOS
    - Applescript
    - Automator
    - Shortcuts
    - bash scripts
  - Linux
    - Crontjobs
  - Windows
    - Launch/daemons
    - bat scripts
- Terminal/Shell
  - Unix (Linux/Mac)
    - bash
    - zsh
  - Windows
    - Powershell
    - cmd
- Data tools
  - Python
    - Matplotlib
    - Plotly
    - Bokeh
  - R
    - ggplot
- IDE
  - Xcode
  - Visual Studio
  - Visual Studio Code
  - Sublime Text
  - BBEdit
  - Atom
  - Vim/EMACS
- Network Diagnostics
  - Wireshark
  - Charles
  - nmap
- Version Control
  - git
    - GitHub
    - Bitbucket
  - Subversion (svn)
- DevOps
  - Continuous Integration and Development (CI/CD)
    - Jenkins
    - Gitlab CI
    - TravisCI
    - Teamcity
    - Bamboo
  - Containers
    - Kubernetes
    - Docker
  - Automation
    - Ansible
    - Puppet
    - Chef
  - Monitoring
    - Subsystems
    - ABBPM
    - ELK Stack
    - Splunk

Game/Real-time 3D Engines

- AR
  - AR Methods
    - Visual Inertial Odometry
      - ARKit
    - SLAM
      - Tango
      - iOS Devices with LiDAR
    - Marker Based
      - Vuforia
  - Headsets
    - Hololens 1 & 2
    - Magic Leap
- VR
  - Headsets
    - A million others
    - Meta Oculus
      - Rift S
      - Quest 2
    - HTC Vive
    - Valve Index
    - Sony PSVR
- Engine Types
  - Commercial
    - Unity
    - Unreal
    - Amazon Lumberyard
    - Crytngine
    - Scenekit (iOS Only)
  - Open/Partially Open
    - Sceneform (Android Only)
    - Three.js
    - Babylon.js

Web/Networking Tools

- Frontend
  - WebAR/VR
    - 8th Wall
    - AR.js/A-Frame
  - Machine Learning
    - ml5.js
  - WebGL Frameworks
    - Three.js
  - Dataviz
    - d3.js
  - Common Frontend Frameworks
    - React.js
    - Vue.js
    - Angular.js
  - Creative/Animation Frameworks and Tools
    - p5.js
    - paper.js
    - Greensock/GSAP
    - Bodymovin
  - Audio
    - tone.js
  - WebAssembly
- Communication Protocols/ Messaging Queues
  - UDP
    - OSC
  - TCP/IP
    - HTTP/HTTPS
      - REST API
  - Websockets
  - ZeroMQ
  - RabbitMQ
- Backend
  - Commercial Services
    - Google Cloud
      - Firebase
    - AWS
      - S3
      - EC2
    - Microsoft Azure
    - Heroku
    - Digital Ocean
  - Video/Image Processing
    - gstreamer
    - imagemagick
    - ffmpeg
  - Server
    - Apache
    - Nginx
    - Node.js
  - Database
    - MySQL
    - Postgres/PostgrSQL
    - MongoDB
    - SQL
      - sqlite
  - CMS
    - Contentful
    - Wordpress
    - Drupal
    - A million others
- Data Serialization
  - XML
  - JSON
  - YAML
  - Protobuf
- Network Hardware
  - Routers
  - Switches
  - Hubs
    - Mesh
    - Repeater
    - Access Point
  - Modem
    - 2.4ghz
    - 5ghz
  - Firewall
    - Cisco
  - Cables
    - Cat6
    - Fiber

Asset Creation

- 2D Asset Creation
  - UX/Design Tools
    - Figma
    - Miro
    - Invision
  - Illustration
    - Procreate
  - Adobe Suite
    - Photoshop
    - Illustrator
    - Premiere
    - After Effects
  - Open Source/Free
    - Inkscape
    - GIMP
- 3D Asset Creation
  - CAD/CAM
    - Fusion360
    - SketchUp
    - AutoCAD
    - Rhino
  - Modeling
    - 3D Studio Max
    - Maya
    - Blender
    - Cinema 4D
  - Other Post Production Tools
    - Houdini
    - Nuke
  - Texturing
    - ZBrush
    - Substance Designer
  - Render Engines
    - Octane
    - V-Ray
  - Asset Pipelines/Management
    - NVIDIA Omniverse
    - Perforce
- Audio/Music Asset Creation
  - Ableton Live
    - Max for Live
  - Cubase
  - Logic Pro
  - Reaper
  - Audacity
  - Reason
  - ProTools
  - Renoise

Optical Tracking

- Related Topics
  - Ambiatency/Low Latency
  - Virtual Production/XR
    - MoCap Rigs/Systems
      - Camera Based
        - Mo-Sys
      - IMU Based
        - ReStyle
        - VICON
    - Other Tracking Systems
      - OptiTrack
      - BlackTrac
      - Rokoko
      - Xsens
- Computer Vision
  - Eye Tracking
    - Tobii Eye Tracker
  - Body Tracking
    - PoseNET
  - Gesture Control
  - OpenCV
  - For More - See AI/ML Section
  - Techniques
    - Background Subtraction
    - Frame Differencing
    - Blob Tracking
    - Optical Flow
    - Contour Detection

Sensors/ Interaction Methods

- Cameras
  - Types
    - Video Cam
      - "Action" cameras
        - GoPro
      - Smartphone
      - Professional Grade
      - Broadcast
      - Security Cameras (PTZ)
    - Webcam
    - Infrared
      - Realsense
      - Kinect
      - Orbbec
      - Ensenso
      - FLIR
    - ZSLR
    - IP Cameras
    - Slow Motion/High Speed Cam
    - Stereo RGB
      - Depth Cameras
      - Thermal Cameras
      - Stereolabs Zed Camera
    - PCAP
    - IR
    - Shadowverse
      - Velodyne
      - Ouster
    - LiDAR
    - Distance Sensor
    - PIR
    - Apple AirTag
    - Pogos
    - Magnetometer
    - Water Detection
    - Humidity
      - "Direct-Force" Pressure
      - Atmospheric/Barometric
    - Pressure Sensors
    - Bend Sensors
    - Unusual or custom inputs
      - ECG (Electrical)
      - PPG (Optical)
      - AirThru
    - Biometric
      - Heart Rate
      - Breath
      - Galvanic Skin Response
    - Magnetic
      - Hall effect Sensor
      - Reed switch
    - Buttons/Knobs/Sliders
      - Rotary
      - Linear
      - Momentary
      - Toggle
      - Arcade Button
      - Switch
      - Potentiometer
      - Load Cell
      - FSR
      - Sensel
    - RFID
    - Capacitive Sensors
    - Light Sensors
    - Temperature Sensors
    - Sound/Vibration
    - NFC
    - Low Frequency (LF)
    - High Frequency (HF)
    - Ultra High Frequency (UHF)
    - Photocell
    - Thermistor
    - Thermocouple
    - Microphones
    - Piezo
    - Linear Actuator
    - DC Motor
    - Stepper
    - Servo
    - Related
      - Robotics
        - Soft Robotics
        - Kinetic Sculptures
        - Solenoids
      - Air/Water Movement
      - Drones
        - Ultraleap Stratos
        - Disney AERIAL
        - Nuvoti Falcon
      - Haptics
- Motors/Actuators
  - Types
- Embedded/Multiple Devices
  - Raspberry Pi
  - Beaglebone
- Microcontrollers
  - Adafruit Feather
  - Arduino
  - Teensy
  - Custom PCB
  - MTStack
- Lights/LED
  - Fadecandy
  - NeoPixel
- Analysis
  - Multimeter
  - Oscilloscope
- Embedded AI Devices
  - Microsoft Azure Percept
  - NVIDIA Jetson Nano
  - Google Coral
- Wireless Communication
  - Zigbee
  - Bluetooth Low Energy (BLE)
  - Wifi
- Bluetooth
  - Beacons
- Touch/Hands
  - Leap Motion
  - Sensel
  - Capacitive
  - Touchscreens
- Position/Motion Sensing
  - Infrared
  - Ultrasonic
  - Ultra-Wide-Band (UWB)
  - Accelerometers/Gyroscopes
  - GPS
  - Rotary Encoder
  - LiDAR
- Other

Physical Computing

Mobile

- Android
  - Devices
    - A million types
- Apple
  - Devices
    - iPhone
      - iOS
    - iPad
      - iPadOS
    - Apple Watch
      - watchOS
- Web Frameworks for Apps
  - React Native
  - Bootstrap
- Mobile AR
  - Native Platform Frameworks
    - Android
      - ARCore
    - Apple
      - ARKit
  - Face detection/Face Filters
    - Snapchat Lens Studio
    - Spark AR
  - WebAR
    - AR.js
    - 8th Wall
  - Other
    - Niantic Lightship
- Sensors
  - Microphone
  - LiDAR
  - Microphone
  - Accelerometer
  - Gyroscope
  - Camera
  - Barometer
  - Ambient Light Sensor
  - Location(GPS)
  - Compass/ Magnetometer

Pro AV Hardware and related Software

- Audio
  - Output
    - Transducer
      - Dayton Audio
      - Butkicker Subwoofer
    - Mixer
    - Signal Processors
      - Compressors
      - Limiters
      - Equalizers
      - Reverb
    - Amplifier
    - PA system
    - Surround
    - Directional
      - Holosonic
      - Soundbaser
    - Spatial
      - Brown Innovations
    - Wave Field Synthesis
    - Ambisonics
    - Binaural
    - Headphones
  - Input
    - Microphones
      - Dynamic
        - Regular Vocal Mic
        - Shotgun
      - Condenser
      - Ribbon
    - Synthesizers
    - Pickups
      - Piezo
      - Transducer
      - Electric
    - Music Software
      - Ableton
      - See Asset Creation
  - Communication/Protocols
    - MIDI
    - OSC
    - Dante
    - Related Concepts
      - Digital Analog Conversion
        - S/PDIF
- Video
  - Hardware
    - Media Server (Hybrid Hardware/Software systems)
    - Other Concepts
      - Transmission/Streaming
      - Converters
      - Switchers
      - Routers
      - Signal Extenders
      - Video Cables
        - Fiber
        - Cat5/Cat6
        - Legacy
          - SDI
          - VGA
        - HD
          - HDMI
          - Displayport
          - HD-SDI
          - 3G-SDI
          - 6G-SDI
    - Basic Media Players
      - Bright Sign
    - Pro Systems
      - Catalyst
      - Disguise/d3
      - Dataton Watchout
      - Pixera
      - Notch
      - Green Hippo
      - Ventuz
  - Software
    - VJ/Mapping Software
      - MadMult
      - MadMapper
      - VDMX
      - Resolume
    - Streaming
      - OBS
      - Wirecast
      - vMix
      - Streaming Protocol
        - RTMP
        - RTSP
        - HLS
        - RTP
  - Output
    - Displays
      - Consumer Display Tech
        - Legacy
          - Vectrex/Oscilloscope
          - Cathode Ray Tube TV
          - Plasma
          - 3D TV
        - Flatscreen
          - Electroluminescent Panel
          - OLED
          - LCD
          - QLED
          - micro LED
        - Projectors
          - Imaging Method
            - DLP
            - LCD
          - Pico Projectors
          - Small Scale
          - Large Venue Projectors
      - Commercial Display Tech
        - Indoor 24/7
          - OLED
          - LCD
          - LED
            - Interactive Floors
            - Video Walls
            - Volumetric Displays
            - Indoor Rated
            - Outdoor Rated
            - Transparent
        - Outdoor Capable/ Weatherproof
      - Alternative Displays
        - Transparent LCD
          - Layered/Stacked Displays
        - Transparent OLED
        - Flexible Display (OLED)
        - Electronic Ink/E-Ink
          - Looking Glass
          - Solidlight
        - Volumetric Illusion
          - Voxiewall
          - Lightfield
          - Mechanical/Persistence of Vision
          - Layered Screens
        - Mechanical
          - Flip-dot
        - LCD with Modified Polarizers
          - Split Flap
          - Worldscape Mirrospace Display
      - Touch Screens
        - Techniques
          - Projection on Water
          - Projection on Fog
          - Persistence of Vision
          - Pepper's Ghost
          - Volumetric Projection
          - Diffusion/Distortion
        - Projected Capacitance (PCAP)
        - Infrared
        - Resistive
        - Surface Acoustic Wave
        - Surface Capacitive
        - Object/Marker Recognition on screens
  - Lasers
    - Laser Control
      - ILDA
      - Pangolin QuickShow
    - Crowd Scanners
    - Laser Projectors
  - Lights
    - DMX
    - Artnet
    - Lighting Consoles
      - GrandMA
- Computers
  - Operating Systems
    - Mac
    - Windows
    - Linux
  - Graphics Cards
- Mobile Devices
  - iOS
  - Android
- Electrical and Safety
- Utility/Management systems
  - Crestron
- Special FX
  - Fog Machine
  - Haze