Spectralink: Preliminary Design Review

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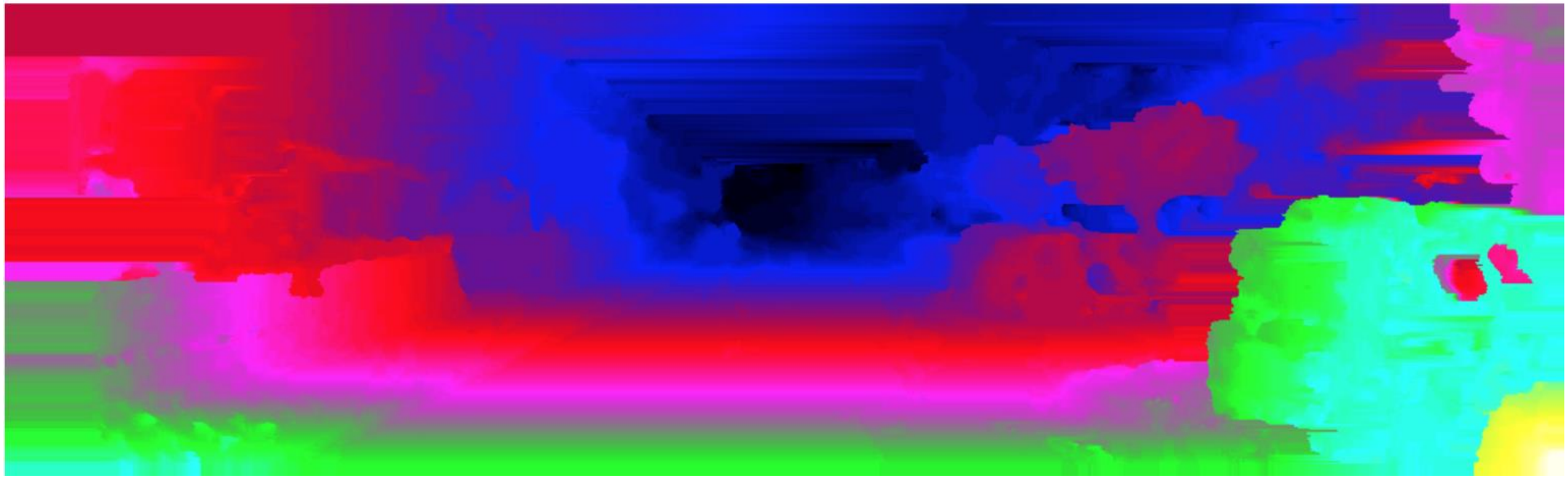
Coverage

- OpenCV Stereo Block Matching
- ZED SDK Disparity Mapping
- Convolutional Neural Network for Depth Estimation
- Hardware Layout and Components
- Schedule

OpenCV Stereo Block Matching

- Quick and easy
- Open source
- High frame-rate
- Low-accuracy

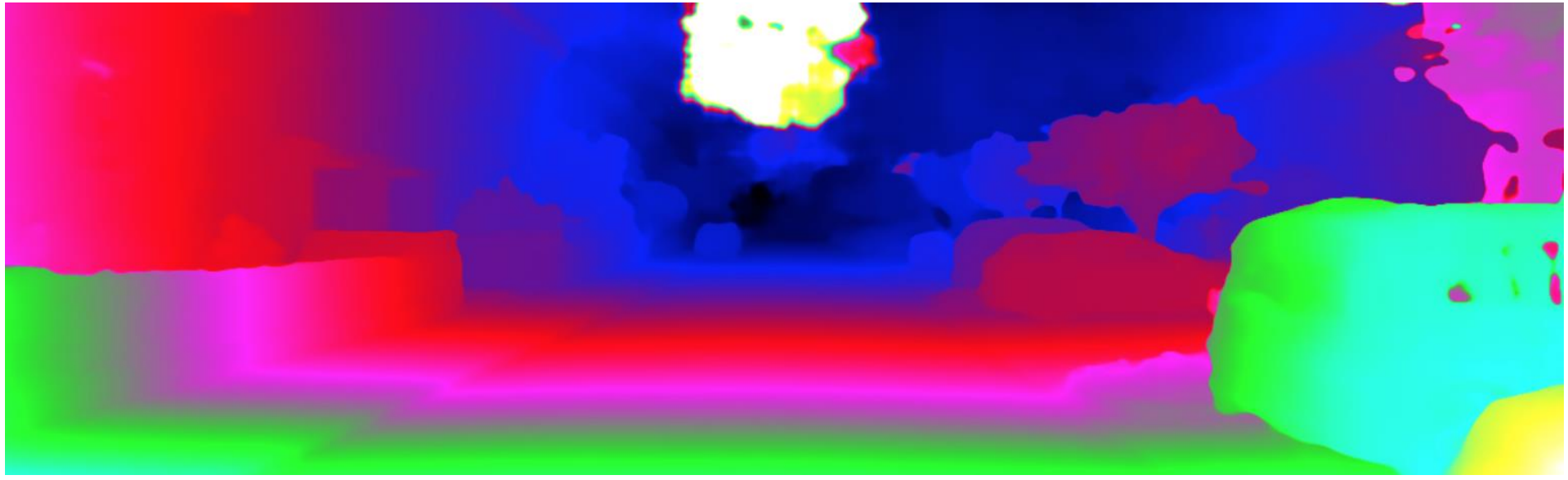


ZED SDK Disparity Mapping

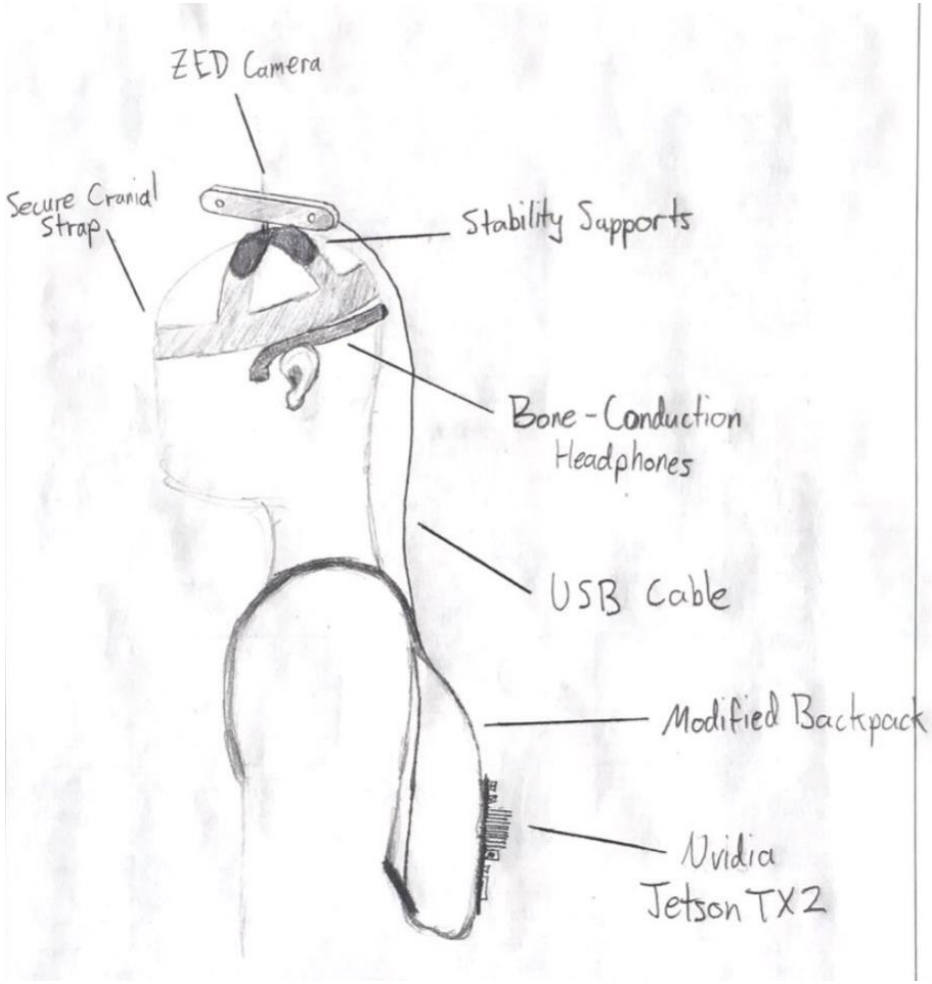
- Quick and easy
- Built with CUDA and tailored for Jetson TX2 board
- High frame-rate
- Moderately high accuracy

Convolutional Neural Network

- Most accurate solution
- Most difficult to implement
- Moderate frame-rate
- Open Source
- Possible to transfer pre-trained weights to local CNN



Hardware Layout



Updated Schedule

- Last three weeks of semester after break: Learn how to import the disparity map from ZED camera into a program that uses API's from the SDK's to test the gradients in the image
- Snapshot: 11/30
- Christmas break: Bailey, Matt and Dustin, if he is available, will meet about once a week to explore temporal mapping and feature extraction in the system