Programming with the Kinect for Windows SDK

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Displaying RGB & Depth Camera Data

Demo
Depth Data

- The distance from the Kinect for every pixel
- Optionally includes Player information
- Distance Range: 850 mm to 4000 mm range
- Depth value 0 means unknown
  - Shadows, low reflectivity, and high reflectivity among the few reasons
- Player Index
  - 0 – No player
  - 1 – Skeleton 0
  - 2 – Skeleton 1
Skeleton Data

Sensor Direction
Joints

- Maximum two players tracked at once
  - Six player proposals
- Each player with set of \(<x, y, z>\) joints in meters
- Each joint has associated state
  - Tracked, Not tracked, or Inferred
- Inferred - Occluded, clipped, or low confidence joints
- Not Tracked - Rare, but your code must check for this state
Joint Smoothing

- Holt’s double exponential smoothing algorithm
- Use to remove joint “noise”
  - Small, high frequency jitter
  - Temporary Spikes
- `nui.SkeletonEngine.TransformSmooth = true;`
- Fine tune using `TransformSmoothParameters`
  - Correction, JitterRadius, MaxDeviationRadius, Prediction, Smoothing
Skeletal Tracking

Demos
Resources

- **Download**
  - [http://research.microsoft.com/kinectsdk](http://research.microsoft.com/kinectsdk)
- **Kinect Programming Walkthroughs**
  - [http://research.microsoft.com/kinectsdk/](http://research.microsoft.com/kinectsdk/)
- **Coding4Fun Kinect Toolkit**
  - [http://c4fkinect.codeplex.com](http://c4fkinect.codeplex.com)
- **Kinect SDK Quickstarts**
- **Kinect CH9**
- **Kinect CH9 – Getting Started**
- **Blog**
  - [http://raychambers.wordpress.com](http://raychambers.wordpress.com)
- **Rx Workshop**
- **Kinect Smooth parameters (filters)**
Happening in Denmark!

- Copenhagen University – DIKU ;)
- Aalborg University
- Danish Technical University – DTU
- IT University Denmark – ITU
- Various partners
  - Preparing for customer specific solutions