

## CSE 591: Visual Analytics

### Lecture 1: Introduction

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### The Goal of Visualization

Ease understanding of the data by providing an effective visual representation

*Amplify Perception*

*Detect the Expected, Discover the Unexpected™*

## What is Visual Analytics

Visualization plus...

- interaction
- data processing
- story telling
- scientific approach

*Visual Analytics is the science of analytical reasoning supported by a highly interactive visual interface*

## Intelligence Analysis

Intelligence analysis is challenging

Huge amounts of data

Low signal vs. noise

Many data types

- text, images, video, sensor data, etc.

Uncertainty

Contradictions

Omissions

## Use of Visualization

### Visual perception

- high bandwidth
- fast screening of a lot of data
- pattern recognition
- higher-level cognition

### Interaction

- direct manipulation
- two-way communication

*Let us have a closer look at the human visual system...*

## The Visual Brain

Over 50% of the human brain is dedicated to vision and visual representations,

- decoding visual information
- high-level processing of visual information
- thinking with visual metaphors

