

Fall 2017



BON APPÉTIT

BONNE HUMEUR

INTRODUCTION

TO

COMPUTER VISION

OPENING HOURS

TUESDAY AND THURSDAY

3:30 – 4:45 P.M.

RESERVATIONS
REGISTRAR.VT.EDU

CHEF DE CLASSE
JIA-BIN HUANG
JBHUANG@VT.EDU

FRESH INGREDIENTS
PRACTICAL RECEIPTS

REAL-WORLD
APPLICATIONS

ROOM 104C, SURGE SPACE BUILDING, VIRGINIA TECH



APPETIZERS

Linear Algebra 1^{1/2} h
Vector/matrix operations, Least Squares

MATLAB programming 1 h
Syntax, Indexing, Vectorization

SALADS

Image Formation 1^{1/2} h
Light, Shading, and Color

Linear Filtering 4^{1/2} h
Linear Transforms, Resampling, Template, Image Pyramid

SAMPLERS

Programming Assignments 12 h
Edge Detection, Feature Tracking, Structure from Motion, Image Segmentation, Face Recognition



ENTRÉE

Correspondence and Alignment 6 h
Interest Points, Feature Tracking, Model Fitting

Perspective and 3D Geometry 7^{1/2}h
Camera Models, Stitching, Stereo, Multi-View

Grouping and Segmentation 6 h
Clustering, EM Algorithm, MRF, Graph Cut

Recognition and Learning 9 h
Machine Learning, Face Recognition, Object Detection, Object Tracking

COMBOS

Advanced Topics 6 h
Action Recognition, 3D scene and contexts, Deep Learning, Language and Vision

DESSERT

Final project 9 h
Work on something new and exciting

