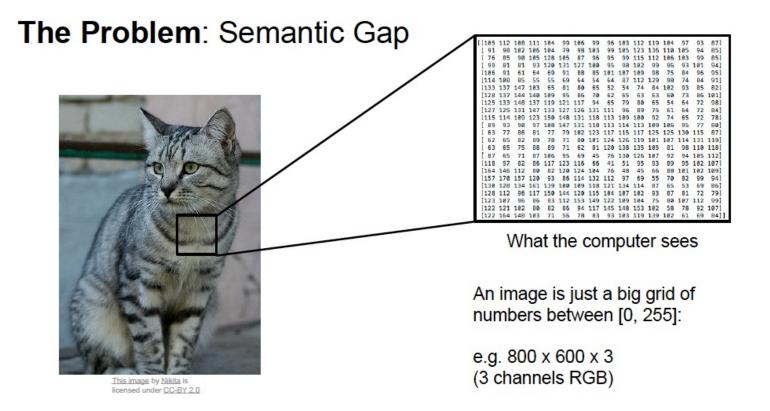
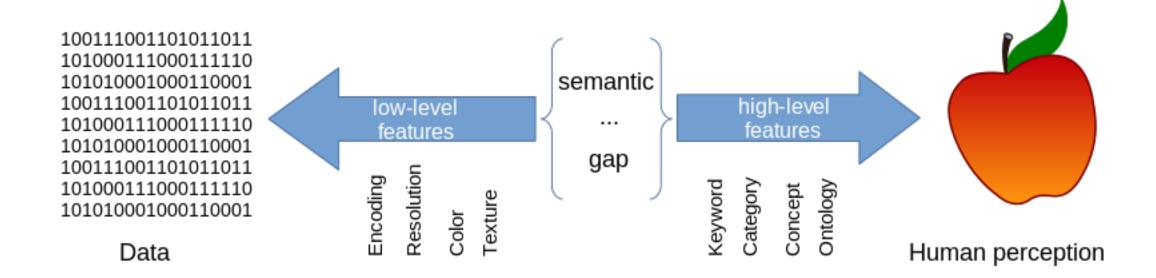
컴퓨터비전(Computer Vision)의 어려운 점들(Challenges) -컴퓨터가 바라보는 영상(Image)

• 컴퓨터가 바라보는 화면



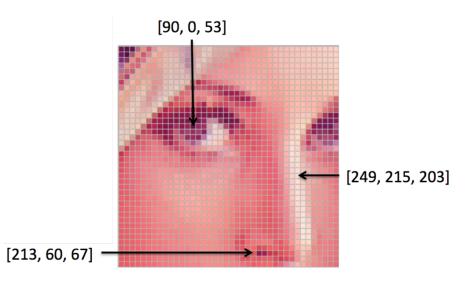
Semantic Gap

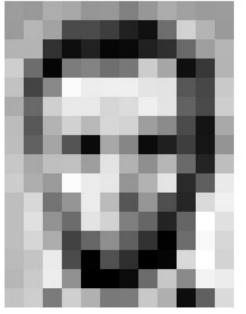
• 저차원적인 특징에서 고차원적인 정보를 추출해야만 함

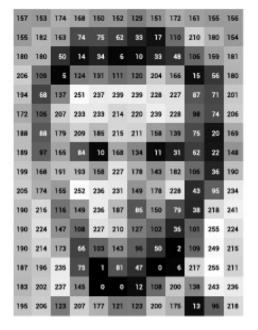


Pixel Intensity

• 컴퓨터가 바라보는 이미지 = Pixel Intensity Matrix







157	153	174	168	150	152	129	151	172	161	155	156
155	182	163	74	75	62	33	17	110	210	180	154
180	180	50	14	34	6	10	33	48	106	159	181
206	109	5	124	131	111	120	204	166	15	56	180
194	68	137	251	237	239	239	228	227	87	71	201
172	106	207	233	233	214	220	239	228	98	74	206
188	88	179	209	186	215	211	158	139	75	20	169
189	97	165	84	10	168	134	11	31	62	22	148
199	168	191	193	158	227	178	143	182	106	36	190
206	174	155	252	236	231	149	178	228	43	96	234
190	216	116	149	236	187	86	150	79	38	218	241
190	224	147	108	227	210	127	102	36	101	255	224
190	214	173	66	103	143	96	50	2	109	249	215
187	196	235	75	1	81	47	0	6	217	255	211
183	202	237	145	0	0	12	108	200	138	243	236
196	206	123	207	177	121	123	200	175	13	96	218

영상인식(Image Recognition)의 어려운 점들(Challenges) - 밝기변화

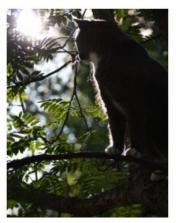
• Illumination(밝기변화)

Challenges: Illumination









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영상인식(Image Recognition)의 어려운 점들(Challenges) - 변형

• Deformation(변형)

Challenges: Deformation



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영상인식(Image Recognition)의 어려운 점들(Challenges) - 가림

• Occlusion(가림)

Challenges: Occlusion







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영상인식(Image Recognition)의 어려운 점들(Challenges) - 배경 장애

• Background Clutter(배경 장애)

Challenges: Background Clutter







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영상인식(Image Recognition)의 어려운 점들(Challenges) -Intraclass variation

• Intraclass variation(같은 클래스라도 다양한 형태로 보인다.)

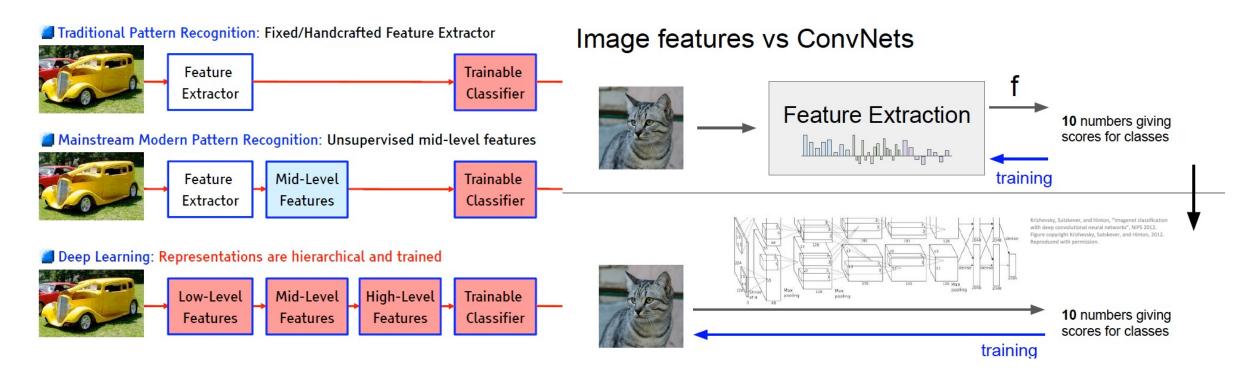
Challenges: Intraclass variation



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기존의 Computer Vision Approach와 Deep Learning의 비교

- Handcrafted Feature vs End-To-End Learning
- CNNs의 핵심 아이디어 : Raw Image로부터로 특징들(Features)을 자동으로 학습하자!



Thank you!